

EQUIPMENT PREVIEW

of CHEMICAL PROCESS INDUSTRIES

Volume 3

Over 23,000 Copies

Chicago, January-February, 1940

Member C. C. A.

Number 1

The Editors' Spotlight

—interesting items selected by The Editors in preparing this issue.

1. **Silver Stainless Steel** — Substantially immune to pit corrosion . . . obtained by adding silver in quantities of less than 1% of total alloy. May be cast, rolled, drawn or forged. See item EP-1218, page 25.
2. **Vernier-Control**—Variable speed transmissions now equipped with vernier-control for fine control of speeds. Recommended for many services. See item EP1239, page 28.
3. **Intensive Mixer** — Mixes more uniform paste, less grittiness, cuts time in half, mixes larger batches. Applicable on many types of material mixing. See item EP1059, page 3.
4. **Fluidometer System** — Non-manual. Completely automatic control for measuring liquid batches. Adaptable to almost all liquid measurement requirements. See item EP1080, page 7.
5. **28-Tube Filter**—Tube life up to 1,120,000 gallons. For low filtration costs for water, solvents, paraffin, beverages, milk, fuel oil, chemicals, etc., etc. See item EP1208, page 23.
6. **Baked Enamel Stripper** — For quickly removing, in from 15 seconds to five minutes, baked enamels of urea-formaldehyde, resyl, glyptal, many long-oil types of japs and air-dry enamels, etc. See item EP1162, page 17.
7. **Injection-Type Mixer** — For gas-liquid and liquid-liquid reactions running under pressure where sharp control over rate of addition of gas or liquid reagent is required. See item EP1139, page 14.
8. **Packless Expansion Joint**—Operates on "cold-sprung" principle. For use on steam, hot water, gas or oil pipe lines. Adaptable to lines in inaccessible locations. See item EP1220, page 25.
9. **Precoat Filter** — Long filtration cycle, clarity in one step. For filtration or clarification of solutions carrying colloidal matter, fine particles in suspension or sticky and gummy solids. See item EP1070, page 5.
10. **Bifurcator**—To remove corrosive, toxic, high temperature and hazardous fumes. Efficient axial-flow pressure fan with non-overloading power characteristics. See item EP1159, page 16.
11. **Steam Control Valve** — Spinning disc creates metal-to-metal contact between seat and disc, preventing "wire-drawing." Design makes for unusually long life. See item EP1215, page 24.

See complete Directory of Products
page 2.

Over 43,000 Came, Saw...



... learned
about
equipment

AND what does that mean to you?

Here, at this Exposition, were more men who run chemical process plants than you could find gathered together for any other activity of these industries.

even though distance and pressure of duties kept many others at home. For these are big . . . and growing . . . industries.

The attendance figures are impressive . . . even though distance and pressure of duties kept many others at home. For these are big . . . and growing . . . industries.

And this gathering dramatically demonstrates the vital part that new products, new equipment are playing in this progress.

If you were among the fortunate thousands that filled the Grand Central Palace, you were not disappointed. 336 exhibitors . . . occupying three entire floors of the spacious Palace . . . gave an unequalled opportunity to "see and feel" hundreds of new products that have required years, and many thousands of dollars, to develop.

Moreover, most of them were specialized products . . . designed specifically to serve you in your specialized work.

Whether, or not, you visited the Exposition personally, you must feel a quickening in your interest . . . an increased recognition of the need to keep abreast, not only at Exposition time but throughout the year. And you can . . . through EQUIPMENT PREVIEW. Its service is unique. Every issue devotes itself solely to bringing you the complete, comprehensive story of product developments that are of vital importance to you in your specialized work.

(To secure EQUIPMENT PREVIEW for your key men turn to "request slip" . . . pages 14 and 15.)

Russell L. Putman
Publisher



Were they interested? Exhibitors said, "It's the best ever."

Is Advertising Worth Reading?

"Some is . . . some isn't." That may very logically be your answer.

Naturally you haven't time to waste on some over-exuberant manufacturer's pretty speeches, wild claims or vague generalities. But if someone will only give you helpful information . . . will show you how his product will serve you . . . of course you'll read with interest.

For this reason we commend to your attention the advertising in EQUIPMENT PREVIEW.

Remember, every advertiser in this issue knows you read this publication for just one prime reason . . . to keep posted on products and equipment. Of course, as publishers, we can't dictate what these advertisers put in their advertisements. But we do stress to every one of them the wisdom of giving you helpful information . . . factual data about their products, how and where the products find most successful application, etc.

And as you look over the advertising in this issue we believe you will find it interesting and useful in the same way that you find the editorial material of value. Together, the editorial content and the advertising will go a long way in keeping you posted.

• • •

PASS ON TO NAME CHECKED

When you have read this issue, remember your associates who would like to see it.

Check

Title or Name

President

Vice President

General Manager

Chief Chemist

Chief Engineer

Research Director

Works Manager



Hackney PROVIDES NEW PRODUCTION ECONOMIES FOR MANY MANUFACTURERS

Thousands of dollars have been saved by manufacturers who have taken advantage of Pressed Steel Tank Company's design and precision manufacturing facilities. Standard and special shapes and shells have been developed by the Hackney method to meet numerous individual requirements. You, too, can receive the benefit of Hackney's over 35 years' experience in producing parts, equipment and

containers for handling and storing gases, liquids and solids. Let Hackney engineers help you reduce costs and increase efficiency — develop new shapes or containers — or improve products now being used. Get the details about the complete time and money-saving service Hackney offers manufacturers. It doesn't cost anything to find out about it and may be the means of making BIG savings. Write for details today. There is no obligation.

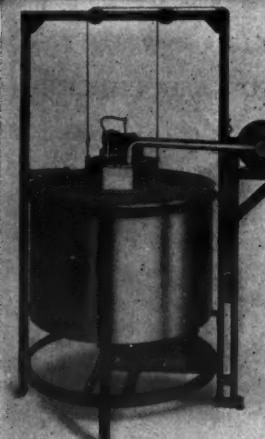
Hackney PRESSED STEEL TANK COMPANY
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Containers for Gases, Liquids and Solids

When inquiring specify EP1053 ... see information request blank, pgs. 14-15

GIVE THE PURCHASER DEPENDABLE ASSURANCE OF THE FUTURE . . .

Purchasers of paints, varnishes and other surface coatings expect to obtain products that will endure for years. Claims for the quality of your product will be much more convincing if supported by the results of a standardized test by means of which products can be compared under identical weathering conditions.



A few days in the NATIONAL TRADE-MARK Accelerated TESTING UNIT

gives results comparable to the weathering effects of prolonged outdoor exposure.

● Tests can be duplicated at any time and in any location.

● Testing cost per panel is small. \$0.91 per 24 hours at 1c per kwh. \$1.05 per 24 hours at 2c per kwh.

● Capacity of Unit, 64 Panels.

WRITE FOR FULL INFORMATION ON THIS DEPENDABLE, TIME-SAVING METHOD OF TESTING

NATIONAL CARBON COMPANY, INC.

Division of Union Carbide and Carbon Corporation

Carbon Sales Division: Cleveland, O. General Offices: 30 E. 42nd St., New York

BIRMINGHAM, BIRMINGHAM, NEW YORK, PITTSBURGH, CHICAGO, SAN FRANCISCO

When inquiring specify EP1054 ... see information request blank, pgs. 14-15

DIRECTORY . . .

... of products in this issue

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Completely Automatic WATER STILLS

For Laboratory or Industrial Use

With one of the new Barnstead Automatic Water Stills you don't have to turn a hand to have, at all times, an ever-ready supply of fresh pure distilled water. For the newest and most advanced models of Barnstead Water Stills are self-starting, self-stopping and self-flushing. No manual attention is needed. The distillate is produced as you use it automatically.

66 LANESVILLE TERRACE, FOREST HILLS, BOSTON, MASS.
When inquiring specify EP1055 ... see information request blank, pgs. 14-15

Barnstead
STILL & STERILIZER CO. INC.

Pulp Stock Pump Guaranteed Non-Binding



Uses — Handling stock for paper machine feed, handling raw waste paper and rag stock, etc.

Features — Has unusually large suction nozzle for pump's capacity with specially proportioned gradation of cross sectional areas so that high consistency stock can be given access into impeller without choking. Suction booster can be installed in suction nozzle to prevent dehydration of extremely high consistency stock. Air binding is prevented by vent in highest part of suction nozzle, also by horizontal top discharge nozzle.

Performance — These pumps are handling stock for paper machine feed, and have been tested on stocks in excess of 6% consistency. Output under varying heads is very nearly constant in spite of foaming characteristics of some of this stock. Pumps are also handling raw waste paper and rag stock without wedging of foreign matter between impeller and casing.

Description — Pumps are built in 3, 4, 5, and 6-inch sizes to handle 15 to 250 tons of paper per day at moderately low operating speed. Bearings have special provision for convenient shaft adjustment. Pump is diagonally split and equipped with large suction hand hole to provide easy access. Enclosed parallel shrouded impeller is provided, with external wiping vanes on both surfaces to keep clear the passages between impeller and casing. Suction shroud of impeller is designed to create hydraulic seal to prevent internal leakage from pressure passages to suction.

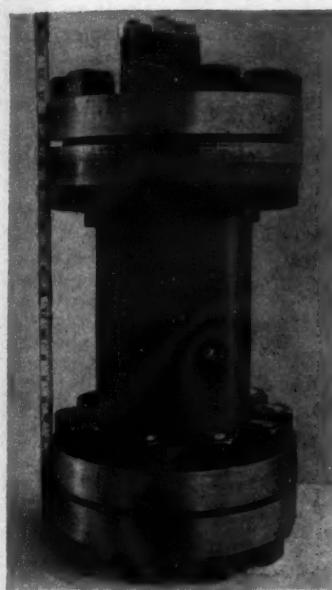
MORRIS MACHINE WORKS, Dept. EP, Baldwinsville, New York.
When inquiring specify EP1056 ... see information request blank, pgs. 14-15

NEW SOLUTIONS OF PLANT PROBLEMS

From the practical experiences of chemical and process manufacturers . . . applying available products in new ways

Trap Discharges Liquids at Extreme Pressure

Operates up to 5,000 Pounds Pressure



pressure. Hydrogen in the system contains 10% to 20% of gaseous hydrocarbons.

Special metals were used for trap body, to resist extreme pressure and ammonia and hydrogen sulphide. But valve and seat are of Anum Metl which is same special alloy used by this manufacturer in their regular steam traps, valves, etc. Other regular features, from their other products, were (a) "leak detector" seat (b) stainless bucket and 18-8 lever. The seat seal is maintained by soft metal washers compressed between trap body and seat cover by alloy, heat-treated studs.

STRONG, CARLISLE & HAMMOND CO., Dept. EP, Cleveland, Ohio.

When inquiring specify EP1057 . . . see information request blank, pgs. 14-15

Rebuilding Dies By Arc Welding

Saves \$2,400 and Five Weeks Time

Problem—Mid-west manufacturer was confronted with necessity of building two new dies to conform with an improved product design or revamp his existing dies.

Solution—An atomic hydrogen arc welder was used to completely rebuild the two dies . . . at a total cost of \$400, and in three weeks time. This cost included annealing dies for welding, actual welding operation, machining and normalizing to remove strains, recarburization to harden the metal, and polishing.

Advantages—Using atomic hydrogen welding for this type of work, metal of the same carbon content and chemical analysis as the die material can be added and shielding action of hydrogen atmosphere prevents formation of impurities during welding operation. Built-up area showed same grain and hardness as rest of the die.

Savings—It had been estimated that new dies would cost \$2,800, and require eight weeks to build. So actual savings were \$2,400, and five weeks of time.

Details of this type of welding available from **GENERAL ELECTRIC COMPANY, Dept. EP, Schenectady, N. Y.**

When inquiring specify EP1058 . . . see information request blank, pgs. 14-15

Mixes More Uniform Paste Cuts Time in Half

Less Grittiness . . . Mixes Larger Batches



Problem—To mix a more uniform paste with less grittiness and reduce time and cost. (In this instance paste being mixed was storage battery plate paste.)

Solution—The mixer previously used — a 50 H.P., 1200 lb. batch mixer of different type —was replaced with the Intensive Mixer illustrated.

This Intensive Mixer

consists of a circular, stationary pan in which is mounted a combination of plows and mullers. These turn material over and line it up under mullers which impart an intensive mulling, kneading, rubbing and stirring action. **Results**—Mixing time was cut approximately in half. Product was not only more uniform than formerly but less grittiness was present in paste. Only 18 H.P. required and each batch was stepped up from 1200 lbs. to 2000 lbs.



Other Uses—Used for many different types of dry, semi-plastic, plastic and pasty mixing where high degree of uniformity of product is required with minimum mixing time. These mixers are furnished in ten different sizes—with either steam or water jackets for temperature control, vacuum or pressure devices for mixing under vacuum or pressure. Constructed from special metals to resist corrosion and eliminate contamination.

NATIONAL ENGINEERING CO., Dept. EP, 545 W. Washington Blvd., Chicago, Ill.

When inquiring specify EP1059 . . . see information request blank, pgs. 14-15

CONVEY-ELEVATE *Safely*

AT Minimum Cost



The big trend in process industries and power plants is to REDLER Conveyor-Elevators—for handling any pulverized, granular, small lump or flaky material. Prevent explosions—avoid dust—eliminate costly feeders—no breakage of material—use 1/4 the usual space—convey in any direction—lower installation costs! Send for REDLER engineering book No. 42. Remember . . .

you can only get all of these advantages with

REDLER CONVEYOR-ELEVATORS

40-page engineering handbook sent on request.



STEPHENS-ADAMSON MANUFACTURING COMPANY
II RIDGEWAY • AURORA, ILLINOIS

Conveying . . . Elevating . . . Screening . . . Transmission

When inquiring specify EP1060 . . . see information request blank, pgs. 14-15

Synthetic Resins Varnish Cooking Oil Bodying

Equipment for oil bodying, and varnish cooking, involving the use of special steels, are a part of the broad line of products designed and fabricated by Blaw-Knox for service in the process industries. We invite you to send for Catalog No. 1685—“Blaw-Knox Process Autoclaves.”

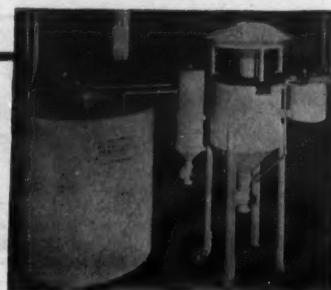
BLAW-KNOX

DIVISION OF
BLAW-KNOX CO.
FARMERS BANK BLDG.
PITTSBURGH, PA.

BLAW-KNOX

When inquiring specify EP1061 . . . see information request blank, pgs. 14-15

**NICKEL-CLAD
STEEL
for
SALT DISSOLVERS
and
BRINE TANKS**



Rock salt dissolving unit with brine storage tank of Lukens Nickel-Clad Steel.

Highly resistant to corrosion by brine solutions, Lukens Nickel-Clad Steel affords positive, economical protection against contamination of salt and brine. Write for complete data on Lukens Nickel-Clad Steel.



Are you on the mailing list for "Clad News"? Write on your letterhead for a copy.



When inquiring specify EP1062 . . . see information request blank, pgs. 14-15

**How BUFOVAK
Can Help You
Solve Processing
Problems**



REACTION KETTLE.

If you have a processing problem involving drying, evaporation, extraction, impregnation, solvent recovery, crystallization, or food processing, the BUFOVAK Research and Testing Plant can help you by recommending the correct type of equipment. Here a small quantity of your material can be processed on a semi-plant scale. It gives accurate indexes of full production results.

Send for literature on . . .

DRYERS . . . EVAPORATORS . . . PROCESSING KETTLES . . . CHEMICAL CASTINGS . . . SOLVENT RECOVERY EQUIPMENT . . . IMPREGNATORS.

Buffalo Foundry & Machine Co.
1547 Fillmore Ave., Buffalo, N. Y.

When inquiring specify EP1063 . . . see information request blank, pgs. 14-15

New Solutions (Con.)

**Vertical Mixer Heats
While Mixing**

Planetary Mixing Action . . . Better Heat Transfer

Problem — To provide a mixer, using planetary mixing action, that would heat mix during mixer operation . . . arranged so that jacketed bowl could be raised or lowered, for loading or unloading, without breaking steam connections.

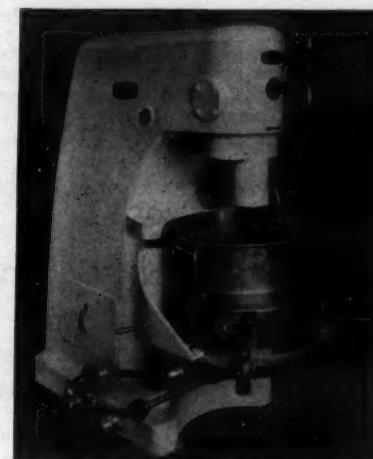
Solution — Swing joints were supplied for both steam and condensate lines connected

to a specially constructed bowl saddle, which was fitted with clamps to hold bowl in place in the saddle, but under steam pressure. Thus steam could be circulated through the jacket around bowl, creating heating effect required during mixing. Clamps holding bowl in place were arranged for quick unlocking to save time.

Operation — Manufacturing states this steam jacketed arrangement has operated perfectly and it has been possible to get better heat transfer with this new design of jacket and bowl saddle. As illustration shows, machine is streamlined and modern in appearance.

READ MACHINERY CO., Dept. EP, York, Pa.

When inquiring specify EP1064 . . . see information request blank, pgs. 14-15



tube swivel fitting in place in the clevis-shaped lead-covered "apron block." The mass tube fitting mounted on the end of the tube has two spherical concave machined seats on opposite sides, one being a port. Its seats engage with convex seats machined on the nipple and the clamping stud which are pressed into apron block.

The viscose solution, which enters apron block through suitable ports, passes through the nipples, into the mass tube fitting, then through mass tube into acid solution. All parts are thus exposed to the viscose solution, to acid fumes and to occasional splashes from the acid bath.

Solution — A series of exhaustive tests on pilot plant equipment lead to the specification of an acid-resisting nickel-molybdenum-iron alloy (Hastelloy alloy A) . . . for mass tube fittings, nipples and clamping studs.

Results — In one plant 48 machines, each including 200 spinning positions, have been so equipped with Hastelloy alloy A mass tube fittings, nipples and clamping studs. After one year of service it is reported that no signs of corrosion are as yet apparent on these alloy parts.

HAYNES STELLITE CO., Dept. EP, 30 E. 42nd St., New York.

When inquiring specify EP1065 . . . see information request blank, pgs. 14-15

"Enduro" — Properties & Resistance

This 8-page bulletin, in two colors, gives a thorough compilation of "Enduro" stainless and heat-resisting steels—general information, physical characteristics, and a long list of laboratory corrosion data from acetic acid (5% agitated, 70 deg. F.) to zinc (molten). Throughout are pictures of various applications in the process industries.

REPUBLIC STEEL CORP., Dept. EP, Cleveland, Ohio.

When inquiring specify EP1066 . . . see information request blank, pgs. 14-15

**Alloy Resists Corrosion
of Rayon Spinning
Fittings Withstand Severe Conditions**

Problem — To provide "mass tube" parts which will withstand exposure to the viscose solution, to acid fumes and occasional splashes from acid bath without developing corrosion on smooth finishes essential to movable clamping surfaces and without threaded parts becoming corroded, thus becoming difficult to remove.

Note equipment illustrated. Three pieces in the swivel at each spinning position permit each mass tube to be "sunk" in coagulating bath for spinning or swung up over apron for inspection or change of spinnerets. An acid-resisting, leak-proof swivel joint is required . . . consisting of nipple and clamping stud which hold mass



Uses — Although the original purpose of this lamp was for use in medical work, its performance suggests applications in many other lines . . . e.g. for sterilization in cosmetics manufacture and in food processing, to sterilize air for air conditioning, etc.

Operation — The lamp's effectiveness in killing germs is due to its energy being radiated in shorter wave lengths than those from sunlamps, etc.—its energy is of wave lengths which do not reach the earth from the sun. While special glass used in sunlamp bulbs transmits practically no radiation shorter than 2800 Angstrom units, the new lamp radiates most of its energy in waves that are 257 Angstrom units. This is the point at which bacteria are most effectively destroyed by ultra violet.

Investigations by Dr. L. R. Koller, General Electric research scientist, have shown that one of the 15-watt lamps in a duct of non-reflecting material, can sterilize 200 cu. ft. of air per minute.

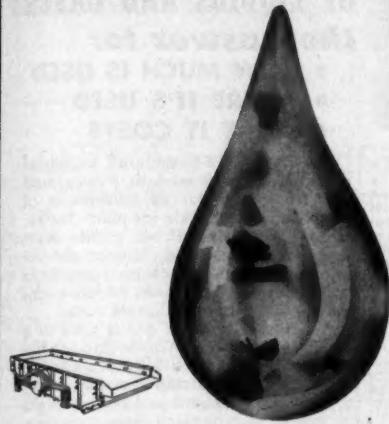
Description — The lethal lamp is a tube of special glass filled with low pressure mercury vapor, resembles regular fluorescent lamps except there is no fluorescent coating inside the tube. Available in three sizes—largest is 15-watt, 18" long and 1" in diameter. Operates off usual commercial 110-volt circuits and requires same auxiliary equipment as fluorescent lamps.

GENERAL ELECTRIC CO., Dept. EP, Schenectady, N. Y.

When inquiring specify EP1067 . . . see information request blank, pgs. 14-15



SOLIDS OUT OF LIQUIDS



Robins Liquid Screens offer a continuous and most economical means of separating solids from liquids. Send for the new bulletin No. 107 "Liquid Screens."



ROBINS

ROBINS CONVEYING BELT CO.
15 Park Row New York, N. Y.
Offices in Principal Cities

When inquiring specify EP1068 . . . see information request blank, pgs. 14-15

Have You A "New Solution"?

If you have recently solved a problem in chemical process manufacturing, through a new application or new use of your regular products, The Editors invite you to submit the facts for publication in this department.

In submitting your "solution" please be sure to give the pertinent facts of (a) the problem, (b) just what was done and (c) what the results were.

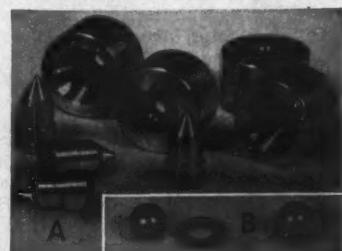
Send to The Editors, EQUIPMENT PREVIEW
737 N. Michigan Ave. Chicago

PUMP VALVES

For Abrasive and Corrosive Service

Uses — Kennametal for pump valves and other valves subject to unusual abrasive and corrosive conditions.

Performance — Test made with high pressure needle valves equipped with Kennametal needle tip and seat were used in experiments involving a tarry fluid containing grit. Previously, as many as seven valves were changed in 24 hours. Kennametal tipped valves and seats gave such service that



only one valve was replaced every one to two weeks. Kennametal balls and seats for oil well pump valves were tested by a large oil well equipment manufacturer. In these tests Kennametal balls were hammered against seats of Kennametal by a pneumatic hammer, using 300 blows per minute of ram, 25 lbs. per sq. in. air pressure and 3/32 in. play between ram and ball and seat. After 105 minutes of hammering, valves were still serviceable, as compared to life of 9 to 11 minutes for tungsten carbide balls and seats. Valves also showed superior resistance to corrosion in water of Louisiana oil wells.

Description — Kennametal is intermetallic compound of tungsten-titanium carbide. It can be supplied in any desired shape for valve parts and in three grades having varying physical properties.

MCKENNA METALS CO., Dept. EP, 129 Lloyd Ave., Latrobe, Pa.

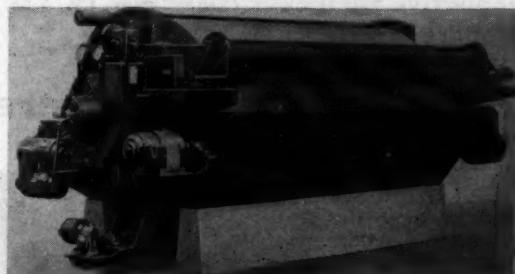
When inquiring specify EP1069 . . . see information request blank, pgs. 14-15

Precoat Filter

Long Filtration Cycle — Clarity In One Step

Uses — Advantages of this equipment apply particularly well to filtration or clarification of solutions carrying colloidal matter, fine particles in suspension, or sticky and gummy solids. Petroleum refineries use it for removal of contact clays from residual and overhead lube stocks. Food product plants are using it to clarify syrupy products containing small quantities of colloidal solids. Chemical plants use it for solving difficult clarification problems.

Features — High and uniform filter rates; desired clarity in one step; low filter cake losses; continuous and automatic operation; manual handling of filter cake eliminated and filter cake easily disposed of; no leaf or plate maintenance; constant supervision not required. Moving knife edge, geared to travel inwardly at extremely low rate, continuously shaves off deposited solids plus a very thin section of filter medium.



Operation — Filter operates continuously under vacuum or pressure. Filtering medium consists of a porous layer of solids formed on drum by pressure differential while it revolves in filter tank into which precoat slurry is fed. After suitable precoat has been formed, product to be filtered is fed continuously into tank. As drum revolves, pressure differential forces liquid through formed filter medium, clarifying it and depositing on the surface a thin layer of solids from the feed. This is carried through the drying and/or washing zone to the discharge point. Precoating usually requires less than one hour and clarification continues uninterruptedly for periods ranging from 16 hours to a week or longer.

Description — Filters are constructed for either continuous vacuum or continuous pressure service. Enclosed units of vapor-tight construction are available for operation at high temperatures and where solvents and other volatile liquids are to be handled. On the general industrial type (exposed type) sizes range from 9 to 300 sq. ft. of filter area. Various metals are used, depending upon service.

OLIVER UNITED FILTERS, INC., Dept. EP, 33 West 42nd Street, New York, N. Y.

When inquiring specify EP1070 . . . see information request blank, pgs. 14-15

(To secure EQUIPMENT PREVIEW for your key men, turn to 'request slip' . . . pages 14 and 15)



MOTORIZED GEAR REDUCER

MOTORIZED SPEED REDUCERS

Manufactured Carefully to Meet the Requirements of Service for Which It Is Designed. The D.O.James Motorized Reducer is designed to have maximum accessibility, strength and efficiency. Its compact construction makes it applicable where space is limited. Over a half century of making all types of gears and gear reducers gives us an experience that is invaluable. The D.O.James Manufacturing Co. established 1880 Chicago.

D.O.JAMES

OVER 50 YEARS MAKERS OF EVERY TYPE OF GEAR AND GEAR REDUCER



MOTORIZED
WORM GEAR
REDUCER

When inquiring specify EP1071 . . . see information request blank, pgs. 14-15

INSTRUMENTS OF CONTROL

*New developments in control instruments
for Production . . . for Laboratory*

Bin Level Indicator

Automatic — Prevents Overfilling Bin

Uses — For automatic measurement of material stored in bins.

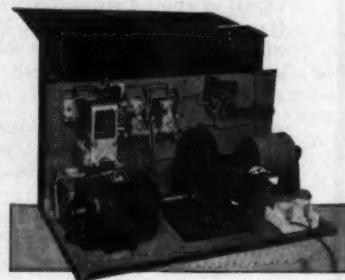
Features — Automatic operation indicates level at all times. Alarm bell or light calls operator's attention and prevents overfilling bin.

Description — Unit consists of reversing motor, time delay circuit, reduction gear, cable drum and two mercoind switches.

Operation — In operation the drum revolves, unwinding cable until weight at end of cable rests. This allows slack in cable permitting mercury switch to make contact causing motor to reverse for given period of time determined by setting time delay switch. Cable then is rewound on drum and weight is raised until time delay switch cuts out. When switch breaks contact, electric circuit causes motor to revolve again in a forward direction until weight again strikes material in bin. Cycle repeats itself and weight follows level of material in bin. Second mercoind switch mounted on top of bin and when weight contacts this switch it tips the mercoind. Second mercoind circuit can either start or stop motors or set off alarm system.

DRACCO CORP., Dept. EP, 4060 East 116th St., Cleveland, Ohio.

When inquiring specify EP1079 . . . see information request blank, pgs. 14-15



preventing errors from incorrect resetting. Remote control provides added flexibility of system. Special duplex valve used for steady fluid delivery and greater accuracy. Equally accurate on high and low viscosity liquids at various temperatures. Non-manual control provides accurate batches as many times as desired in continuous processes.

Operation — Control is first set to desired measurement. After this first setting, no further attention is required until a different quantity batch is wanted. Starting switch is then operated (this can be done by hand, electric relay, photoelectric cell, etc.). Automatically, the duplex valve opens starting the liquid flow through meter. Meter drives the "Brass Brain," either directly or remotely, if desirable to have mechanism distant from meter. When 98% of amount has been measured off, mechanism automatically shuts off major unit of valve. Minor valve then accurately measures off remainder at reduced flow to insure exact measurement. Once this is completed, minor valve closes. Stoppage of flow through meter automatically actuates the reset motor on control unit, turning control back to original setting for next cycle.

BRAAYER INSTRUMENT CO., Dept. EP, 1615 William St., Buffalo, New York.

When inquiring specify EP1080 . . . see information request blank, pgs. 14-15

Fluidometer System

Non-Manual — Resets Automatically



Uses — Completely automatic control for measuring liquid batches. Adaptable to practically every liquid measuring requirement whether it be a problem of pounds, gallons, barrels, or tankcars. Lends itself to simultaneous or successive batching of different liquids through an individual or common orifice in any predetermined amounts.

Performance — Independent laboratory made accuracy tests. Tabulation of 82 separate tests (with liquid batch variation from 83.431 lbs. to 917.633 lbs., and pressure variation from 5 lbs. to 100 lbs.) showed amounts predetermined were in agreement with the weighings within a small fraction of one percent. Power consumption averaged 0.00001 kilowatt hours per gallon measured.

Features — Automatically resets, thus saving time and

Electric Alarm Register

Indicates Measured Quantity



that flow should be stopped.

Operation — To operate, merely necessary to set large movable center hand to the quantity desired for measurement as shown on outer circle of register dial face. Setting is done prior to starting flow through meter. When correct quantity has been measured, center hand will have moved back to zero position where it closes electrical circuit. This impulse can be utilized to ring bell or buzzer, light a bulb, or otherwise call operator's attention that measured amount is completed.

Description — This register is designed for use only on 6 volt current. Ordinary dry cells will provide sufficient energy to ring bell, light bulb, etc. Small transformer can also be used to reduce 110 volt A.C. current and thus operate register from this power source. By means of suitable relay, solenoid valve can be operated to provide an automatic shutoff. Unit is available in a variety of dial ranges.

PITTSBURGH EQUITABLE METER CO., Dept. EP, 400 Lexington Ave., Homewood, Pittsburgh, Pa.

When inquiring specify EP1081 . . . see information request blank, pgs. 14-15

THE SHADOWGRAPH...



**Industry's
Newest Precision
Scale . . .**

Friction is the major enemy of the Scale Engineer. When EX-
ACT WEIGHT Engineers created the SHAD-
OWGRAPH they eliminated all mechanical

indication . . . replaced it with an electric light ray intercepted by a fine needle or wire. This eliminates a friction point effectively, simplifies construction and increases scale efficiency materially.

Write for new literature covering all points of this revolutionary new principle. Do it today.

THE EXACT WEIGHT SCALE CO.
31 W. Fifth Ave. Columbus, Ohio

When inquiring specify EP1082 . . . see information request blank, pgs. 14-15

Do You Have . . .

A CONTROL PROBLEM?

- ★ Control of liquid levels in storage tanks?
- ★ Maintaining operating pressures within close limits?
- ★ Starting or stopping electrically driven pumps?

MERIAM *Contactor* **MANOMETER**
SOLVES SUCH PROBLEMS DAILY

This practical device is a boon in scores of ways — anywhere you want to control pressure, vacuum or liquid level. The mercury, at a predetermined level, makes an electrical contact to ring a bell, flash a light or actuate some mechanical device.

You benefit by visible reading, trouble-free operation (practically no moving parts) and accurate control at low cost. A wide range of models for every condition. Ask for folder and prices.



THE MERIAM CO.
SINCE 1911 CLEVELAND, OHIO

When inquiring specify EP1083 . . . see information request blank, pgs. 14-15

"To Err Is Human"
—Pope

Avoid Human Error
in your
PRECISION TIMING
with
Automatically
Controlled
STANDARD ELECTRIC
STOP CLOCKS



You know your split-second timing is right when you use the automatically controlled Standard Stop Clocks. Use them for research and production testing of thermal elements, circuit breakers, relays, fuses, fluorescent lamps, engine fuel consumption, speed of moving objects, rate of flow of liquids, etc.

Sturdily built for years of trouble-free service.

30 DAYS FREE TRIAL

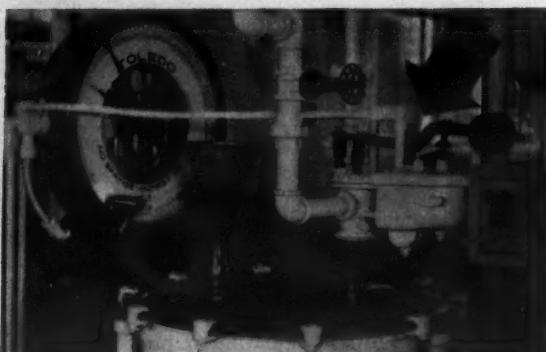
For literature, prices and 30 day free trial offer,
write Dept. N.

The STANDARD ELECTRIC TIME CO.
SPRINGFIELD

MASSACHUSETTS

When inquiring specify EP1084 . . . see information request blank, pgs. 14-15

• SOLENOID VALVES for
Automatic Liquid Measurement
in patented or secret processes



PERHAPS you have wondered how you could free yourself from the liabilities of manual control in the routine duplication of exact mixtures and compounds. In many cases, Davis Solenoid Valves can give you the answer. They are now being used in combination with electric scales, photo-electric "eyes," relays, and time switches in a wide variety of plants. No small measure of the success of these present installations is due to features found only in Davis Solenoid Valves. Ask for our recommendations on your problem. CATALOG ON REQUEST.

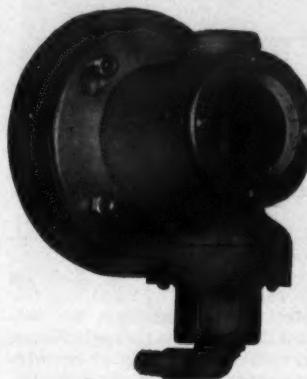
DAVIS REGULATOR CO., 2503 S. Washtenaw Ave., Chicago, Ill.

When inquiring specify EP1085 . . . see information request blank, pgs. 14-15

Control Instruments (Con.)

FLAME DETECTOR

Warns of Explosion Hazard from Ignition Loss



Uses — To warn boiler operators of possible furnace explosions resulting from a loss of ignition in boilers fired with fuels burned in suspension.

Features — Shows complete loss of ignition. Indicates "spotty" or "streaky" flame resulting from an intermittent or unsatisfactory fuel feed. Sounds alarm warning of ignition loss and prevents hazard of explosion when fuel supply is cut off and then re-

sumed with delayed ignition.

Operation — Device consists of light-sensitive phototube within special air-cooled housing which is mounted on burner front or boiler wall, so that phototube "sees" the flame at point where ignition begins to take place. As long as burner maintains ignition, light from flame reacts on phototube, causing it to have a low electrical resistance and thereby maintain flow of current through amplifying tube in photoelectric relay. In case of flame failure, light to phototube is immediately reduced. Without direct light from flame (at point of ignition where flame failures start), phototube resistance increases sharply and current flow in amplifier is reduced with result that relay operates to close or open contacts for sounding alarm.

BAILEY METER CO., Dept. EP, 1050 Ivanhoe Road, Cleveland, Ohio.

When inquiring specify EP1086 . . . see information request blank, pgs. 14-15

**Portable Lance
Pyrometer**

Oil-Proof Finish — Extra Heavy Thermocouples

Uses — For detecting heat leaks in boiler heatings due to loose bricks, broken baffles, soot, scale, warped doors, etc. For checking temperatures of many types of molten metals; for high surface temperatures of billets, slabs, heated rollers, forgings, etc., as well as for oven use (japaning, ceramics, drying, baking, etc.), liquid heating (cyanide, oil and salt baths, oil refining), hot-plates, heating elements, etc.

Description — Instantly indicates temperatures within 2% of absolute accuracy. Reads directly and has manual cold end adjustment. Replaceable tips extend unit's life. No battery or electrical connection necessary as unit is portable. Thermocouples are of six-gauge wire (slightly larger than 3/16") for heavy duty shop usage.

Thermocouples of various types are available in lengths to six feet so that operator can stand away from intense heat when taking readings. New black crackle finish is impervious to oil. Overall length of case is 11", dial is 2 1/2" in diameter, and scale length is 2 1/2". Range for various models is from 60 deg. F. to 400 deg. F., with variations for each model. Another model ranges from 50 deg. F. to 2500 deg. F. Low cost instrument.

RUSSELL ELECTRIC CO., Dept. EP, 343 West Huron St., Chicago, Ill.

When inquiring specify EP1087 . . . see information request blank, pgs. 14-15

WANTED

YOUR RUBBER-COVERING PROBLEMS

★ Have you an irregular or odd-shaped metal part or product which has defied all previous efforts to apply a satisfactory rubber covering? If so, it will pay you to talk to Miller. By means of the Anode process, they are able to apply a uniform thickness of hard or soft rubber to any shaped metal object in a single dip.

Anode not only solves the problem of curves and angles but gives you a rubber covering having greater tensile strength, smoother finish, and increased age resistance. Miller engineers have had many years' experience in the successful application of the Anode process to difficult rubber-covering jobs. Write today, stating your particular needs. And remember—the more difficult the job, the more likely Miller can save you time and money.

THE MILLER RUBBER CO., INC.
AKRON, OHIO

"Engineers in Rubber"

When inquiring specify EP1088 . . . see information request blank, pgs. 14-15

Laboratory Test Cabinet
Positive Humidity & Temperature Control



Uses — For weathering, drying, incubation, etc., testing in laboratory work. Varied uses include drying soil samples, incubating cultures, cable insulation and materials testing, humidifying paper labels, weathering packages, testing cement mixtures, rubber compounds, rayon yarn, wax papers, food products, chewing tobacco, etc.

Features — Has positive control of humidity and temperature with circulated air. Simplicity of operation under various temperatures and humidity. Temperature controlled from minus 50 deg. F. to 350 deg. F. and humidity from 20% R.H. to 95% R.H. in various cabinets.

Description — All cabinets are made to order to meet special laboratory conditions. Door is counterbalanced to raise upward so as not to obstruct aisle, as a hinged door would do. Cabinets are finished in white enamel with chromium trim. Unit illustrated has sturdy door for visible inspection on contents.

TENNEY ENGINEERING, INC., Dept. EP, 46-A Farrand St., Bloomfield, N. J.

When inquiring specify EP1089 . . . see information request blank, pgs. 14-15

EQUIPMENT PREVIEW

Thermometer and Pressure Gauge

Flat, Spiral Actuating Elements



Uses—These instruments include indicating and recording types of thermometers for temperatures from minus 40 deg. F. up to 1200 deg. F., and recording or indicating pressure and vacuum gauges from 6 lbs. of water up to 2500 lbs. per square inch, and on vacuum ranges of 10 inches of mercury and over.

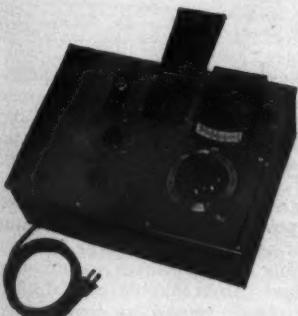
Features—Powerful, flat spiral actuating elements have simple pen torque without sacrificing response speed. Elements are heat-treated to insure permanent calibration, and have extra over-range capacity. Special safety link between actuating element and pen provides overload safeguard protecting mechanism from damage if pen is moved in either direction manually. Re-designed, rectangular case. **Description**—Chart firmly secured to driving mechanism by tapered stud and tapered chart positioning stud, eliminating chart knob and chain. When charts are renewed, they are automatically in time as tapered position stud is in effect the hour hand of electric clock. Pen shaft, with sturdy outboard bearing, hardened pivots, and mounted on rigid casting, unaffected by vibration. 8" pen arm permits pen travel of 4 1/4", and is easily removed and replaced with no effect on calibration. Has adaptor block to permit easy removal of actuating element for replacement or change of range by user.

BROWN INSTRUMENT CO., Dept. EP, Wayne & Roberts Aves., Philadelphia, Pa.

When inquiring specify EP1090 . . . see information request blank, pgs. 14-15

Photo-Electric Colorimeter

Line Operated — Will Take 6" Long Sample Holders



Uses—Instrument has wide field of application, ranging from simple measurements of light transmission of liquids to colorimetric and turbidimetric chemical analysis and to abridged spectrophotometric determinations. Special provisions have been made for accurate measurement of extremely dark and extremely transparent liquids.

Features—Instrument's construction allows use of wide variety of sample holders and light filters, including monochromatic filters. Two blocking-layer photocells in balanced circuit make possible operation from power line without use of batteries or constant-voltage transformers, and line voltage

changes have no effect upon readings. Stable and linear photocell response.

Description—Colorimeter is made in four standard models. For general purposes, instrument is furnished as a self-contained unit with built-in pointer galvanometer. This model is suited for broad-band color filters and for 1" plane parallel sample holders, test tubes or microcells. Another model, designed for abridged spectrophotometric analysis, is equipped with powerful light source and highly sensitive mirror galvanometer to permit use of inherently very dark monochromatic filters. A third model accommodates sample holders up to 6" long for accurate measurement of almost colorless liquids. Fourth model includes long sample holder and monochromatic feature. A neutral multiplier filter is used for measuring liquids of such low transmission that reading would come close to zero position on dial.

DR. F. LOEWENBERG, Dept. EP, 10 East 40th St., New York, N. Y.

When inquiring specify EP1091 . . . see information request blank, pgs. 14-15

Potentiometer Controller

Indicating, Self-Balancing Type



and allows for unit construction design where there is no motion unless temperature is changing.

Description—Indicates temperature on 10-inch scale. Control point is adjusted by means of knob which is readily visible, thus permitting comparison between control setting point and temperature indicator. Special lighting of scale accomplished by using Lucite rod that carries illumination from same source of light that is used to determine galvanometer position. Unit is of the indicating, self-balancing type.

C. J. TAGLIABUE MFG. CO., Dept. EP, Park & Nostrand Aves., Brooklyn, N. Y.

When inquiring specify EP1092 . . . see information request blank, pgs. 14-15

Laboratory Test Gauge

1/4 of 1% Scale Range Accuracy

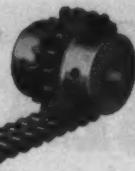


for easy reading. It is molded of crystal-clear, transparent plastic with a compression strength of 15,000 lbs. per square inch.

MANNING, MAXWELL & MOORE, Ashcroft Gauge Div., Dept. EP, Bridgeport, Conn.

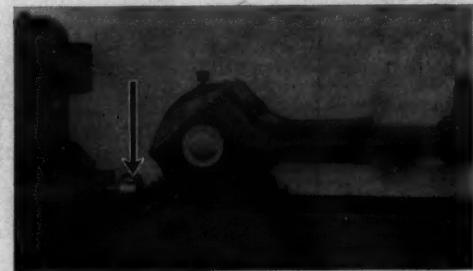
When inquiring specify EP1093 . . . see information request blank, pgs. 14-15

These Couplings Are Easier to Install and Disconnect



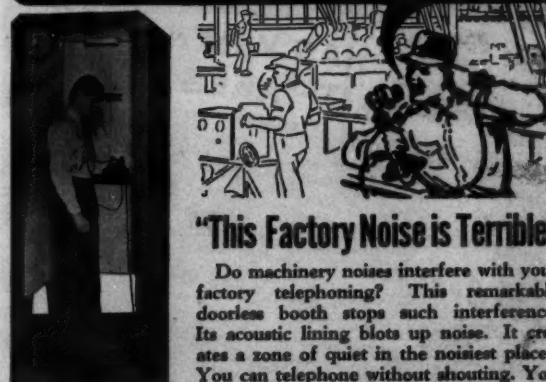
Simple and rugged—just two sprockets and a length of double-strand DIAMOND Roller Chain. Clearance between the steel sprockets and the roller chain sideplates permits freedom of movement and adjustment to angular misalignment of shafts and end play . . . Removal of one chain connecting link is all that need be done to separate the driving and driven units . . . Diamond Flexible Couplings are made for fractional horsepower drives and up to 500 H.P.

Diamond Revolving Aluminum Casings snugly enclose the coupling. They are secured by four screws, making installation and removal simple and quick . . . Bulletin No. 12 contains complete information supplied by the maker, DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis, Ind.



When inquiring specify EP1094 . . . see information request blank, pgs. 14-15

What's that? LOUDER!



"This Factory Noise is Terrible!"

Do machinery noises interfere with your factory telephoning? This remarkable doorless booth stops such interference. Its acoustic lining blots up noise. It creates a zone of quiet in the noisiest places. You can telephone without shouting. You can hear distinctly. Errors are avoided.

This Acousti-Booth Soaks Up Noise
Mail Coupon for Free Booklet

Please send FREE illustrated booklet describing the Burgess Doorless Acousti-Booth and how it makes telephoning easy. Include list of satisfied users. Mark booklet and list for the attention of:

Name _____

Firm Name _____

Street—City _____

Burgess Battery Company, Dept. EP, 300 W. Huron St., Chicago
Operating under Burgess Patents



When inquiring specify EP1095 . . . see information request blank, pgs. 14-15

BLAST the air out of heating COILS



We don't recommend dynamite for air removal, but you do need to get air out of heating coils in a hurry. You blast with steam on coils cleaned by Anderson Super-Silvertop equipped with snap action Thermal Air Eliminators. With that air removed coils immediately fill with hot dry steam and heating starts at once. Extra capacity Super-Silvertops save you heating time, installation time and maintenance expense. Find out more about them. Get the facts on instant air elimination—write today for complete information.

THE V. D. ANDERSON COMPANY
1854 WEST 96th STREET • CLEVELAND, OHIO

Super-Silvertop STEAM TRAPS

When inquiring specify EP1096 . . . see information request blank, pgs. 14-15



BLAW-KNOX Electroforged STEEL GRATING

HAS WHAT IT TAKES

Electroforged one-piece construction

Easily maintained paint reaches entire surface

Self-cleaning no sharp corners to snag

Non-slip because of the twisted bar

FREE

Paper weight size sample. Just fill in and mail the coupon.

BLAW-KNOX DIVISION of Blaw-Knox Co.
Formerly Bank Bldg., Pittsburgh, Pa.
SEND GRATING SAMPLE TO

Name _____
Street _____
City _____ State _____

When inquiring specify EP1097 . . . see information request blank, pgs. 14-15

Control Instruments (Con.)

Hand-Operated CO Indicator

No Wires—Can Be Used Anywhere

Uses — Testing atmospheres for presence of carbon monoxide.

Features — Hand-operated and portable. No wires needed and can be used anywhere. Light weight and easy to carry. Safe even where flammable gases may be present. Meter can be read directly to .005% and readings estimated to .001% (1 part per 100,000).

Description — Four-cylinder, radial hand operated pump develops proper suction for sampling with little effort on operator's part. Built-in pressure regulator automatically maintains correct sample flow, which is indicated on a diaphragm-type pressure gauge. Has direct-reading calibrated meter. Unit weighs 16 pounds complete and is supplied in a durable, leatherette-covered case.

MINE SAFETY APPLIANCES CO., Dept. EP, Braddock, Thomas & Meade Sts., Pittsburgh, Pa.

When inquiring specify EP1098 . . . see information request blank, pgs. 14-15



Electriccontact Meters

This two-color, four-page bulletin gives specifications, sizes, capacities, prices, etc., of these electriccontact meters for automatic meter-control of liquid-handling operations through electrical means, after passage of a preset quantity of liquid through the meter. One section offers suggestions in planning installations concerning types of accessory equipment required with these meters.

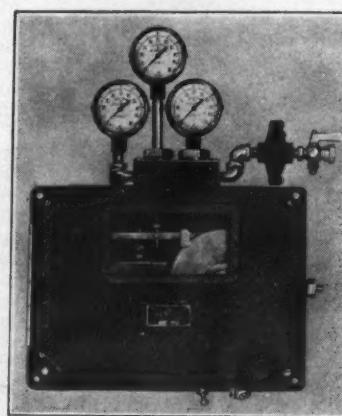
BUFFALO METER CO., Dept. EP, 2917 Main Street, Buffalo, N. Y.
When inquiring specify EP1099 . . . see information request blank, pgs. 14-15

Time Cycle Controller

27 Different Length Cycles

Features — By simple shifting of gear shift lever, 27 different length cycles are available. Synchronous motor and mechanically geared drives give unvarying timing with a time selection which can be completed in a few seconds. Machine operator or foreman can adjust them to meeting varying requirements of differing materials, timing and cycles.

Time ratio of one operation to another can be quickly varied by the rotation of a cam segment, or segments, in relation to the main



cam. For intricate or radical changes in operating cycles, it is necessary only to remove the cam and to replace it with a cam cut to requirements. Cam changes are necessary only in radical departures from previous cycles or operations.

Description — Controller mechanism is all mounted on a cast aluminum base and housed in a dust and moisture proof case. Entire case can be quickly removed without disturbing assembly or operation, affording accessibility of all working parts. All gears are accurately machine cut. Equipped throughout with precision ball-bearings.

INDUSTRIAL INSTRUMENT CO., Dept. EP, 14th & Florida Ave., Akron, Ohio.

When inquiring specify EP1100 . . . see information request blank, pgs. 14-15

Thermometers & Pressure Gauges

A colorful booklet describes three types of thermometers—vapor, gas and mercury actuated. The basic instruments are effectively displayed in photographs with vital features clearly indicated and explained in detail. The booklet stresses accuracy and simplicity features of these instruments. Booklet No. 2-17 is available upon request.

BROWN INSTRUMENT CO., Dept. EP, Wayne & Roberts Aves., Philadelphia, Pa.

When inquiring specify EP1101 . . . see information request blank, pgs. 14-15

"Industrial Metering"

An attractive, two-color booklet of 16 pages is used to adequately illustrate and describe a complete line of meters. An informative section is devoted to installations of various types of meters with descriptive material for each, thus indicating the wide range of uses for these meters. Another section lists liquids which can be successfully metered under proper operating conditions of temperature, pressure, specific gravity and flow. Bulletin No. M-704 is available upon request.

PITTSBURGH EQUITABLE METER CO., Dept. EP, 400 Lexington Ave., Homewood, Pittsburgh, Pa.

When inquiring specify EP1102 . . . see information request blank, pgs. 14-15

Refrigeration Service Thermometer

Pocket Size—Large, Legible Face

Uses — Wherever testing is to be done in refrigerators, cold storage plants, ice cream plants, dairies, etc. For checking air conditioning and cooling jobs, checking thermostats, brine tanks, etc., and laboratory applications.

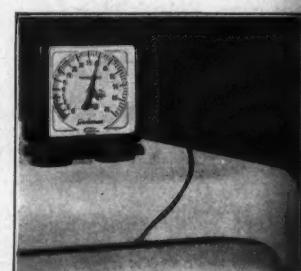
Features — Pocket-size—easy to carry—capillary tubing coils around mechanism in case.

Small straight bulb makes possible using same instrument for all applications. Rubber suction cup base permits use in any position on practically all types of surfaces. Large, legible face read from distance. Accurate to within one degree. Can be quickly and accurately recalibrated. Inexpensive.

Description — Unit has high-grade vapor tension bourdon-tube system, permitting powerful, heavy-duty movement with machine cut pinions and sector and large bearings. Base is solid rubber, resting on two rubber vacuum cups to prevent surface damage. Unbreakable crystal offers protection against overpressure caused by temperatures beyond maximum reading of instrument. Capillary tubing, wound on drum in case, covered with tough armor to prevent damage from pressure of door gasket when used in refrigeration boxes (see cut).

JAS. P. MARSH CORP., Dept. EP, 2095 Southport Ave., Chicago, Ill.

When inquiring specify EP1103 . . . see information request blank, pgs. 14-15



EVERY BUSINESS NEEDS SIRENS

What for?

- START-STOP WORK SIGNALS
- EMERGENCY WARNINGS
- BURGLAR ALARMS
- FIRE ALARMS

Where?

- Factories-Warehouses-Yards
- Construction Projects and Camps
- Public and Private Buildings
- Ships-Cranes-Conveyors
- Mines and Quarries

Why?

- Because they save time, property and lives.
- Because the tone penetrates other noise levels.
- Because the quality of Federal Sirens assures dependable service long after they are amortized.

WRITE FOR INDUSTRIAL LITERATURE

FEDERAL ELECTRIC CO., Inc.

8715 S. STATE ST. CHICAGO, ILL.

When inquiring specify EP1104 ... see information request blank, pgs. 14-15

Scale and Percentage Calculator

100% Stainless for Corrosive Conditions



Uses—Designed to meet special requirements of artery pumping hams in curing pork products where constant exposure to high salometer brine and meat juices have been destructive to scales made of other metals. Unit is equally adaptable to fruit or vegetable processing plants, or anywhere that rust and corrosion factors are important.

Features—Entire unit, both working and base parts, is either stainless steel or Monel. Has automatic calculating device for showing finished weight to be attained by product on scale when a definite percentage of its original weight is added, as in curing meats, adding simple syrups to fruits, etc.

Description—Operating knob handles "figuring" of calculations. Weight needle shows actual weight of product. Turn of knob brings calculator needle to correspond with weight needle. Then, second calculator needle automatically indicates weight product should have after additional material (pickle in case of ham, syrups for fruits, etc.) has been added. Scale furnished with various cams for indicating percentages. Simple turn of dial on back of scale sets calculator at desired percentage.

GRIFFITH LABORATORIES, Dept. EP, 1415 West 37th St., Chicago, Ill.

When inquiring specify EP1105 ... see information request blank, pgs. 14-15

EQUIPMENT PREVIEW

"Metameter System of Telemetering"

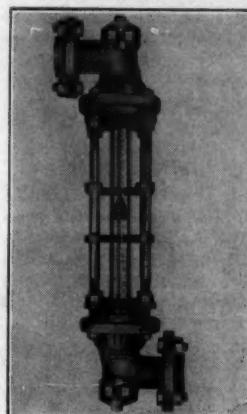
A very thorough outline of this company's Metameter system is provided in this 28-page booklet. Many installation pictures add to the booklet's effectiveness, and these are ably supplemented with line drawings showing hook-ups and methods of operation. One of the major features stressed is that of measuring in one location, transmitting results any distance (a few feet to many miles) and recording in the distant location. Bulletin 515 is available upon request.

BRISTOL COMPANY, Dept. EP, Waterbury, Conn.

When inquiring specify EP1106 ... see information request blank, pgs. 14-15

Corrosion-Resistant Flow Meter

Metal Cast Parts of Duriron



Uses—Can be used for sulphuric, hydrochloric and phosphoric acids in their most corrosive forms.

Features—Fittings are made entirely of Duriron for severe corrosive conditions.

Description—All desired forming of Duriron parts by casting process or grinding. For this reason flanges are not part of body castings but are split ring iron pieces pushed over a stub and held together by bolts which fasten rotameter to connecting pipe line. Flanges which attach to tie rods are also split rings (see photograph), and these are inserted into grooves in rotameter body.

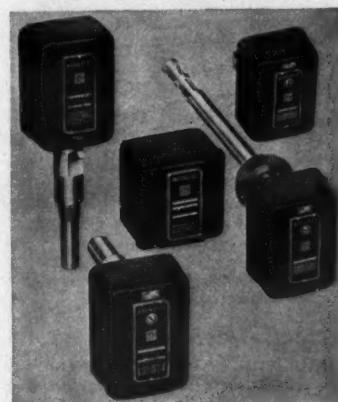
Unit is available in sizes from $\frac{1}{2}$ " to 4" and can be used for capacities from 1 cc/minute up to 200 gallons/minute.

FISCHER & PORTER CO., Dept. EP, 113 West Penn St., Philadelphia, Pa.

When inquiring specify EP1107 ... see information request blank, pgs. 14-15

LIMIT CONTROLS

Pressuretrols, Aquastats, Airstats and Furnacestats



This is a new line of limit controls of the manufacturer.

Features—These new controls are small and compact. Differential adjustment mechanism can be changed instantly. Visible scales and external adjustments. Bimetal actuation gives more positive and longer life service.

On the furnace controls the ball and socket and stem have been reduced

in size and the helix is guarded.

The surface aquastat has a new method of mounting. Pipe straps are concealed and friction collar permits installation on vertical, horizontal or angle pipes. Immersion Aquastats are available for horizontal and vertical mounting.

MINNEAPOLIS-HONEYWELL REGULATOR CO., Dept. EP, 2950 Fourth Ave., South, Minneapolis, Minn.

When inquiring specify EP1108 ... see information request blank, pgs. 14-15

CASH IN on this Money-Saving Method of Removing Solids from INDUSTRIAL WASTE WATERS

The Link-Belt utilized vibrating screen offers a low-cost, efficient method of removing solids from factory waste water; thus preventing pollution of adjacent streams. In numerous instances waste matter removed over Link-Belt screens has been made into valuable by-products.

Link-Belt installations of this kind are in service at the present time at citrus canning plants, textile mills, tanneries, steel mills, vegetable canneries, by oil producers, etc. Let us tell you more about the profit possibilities of this screen.

LINK-BELT COMPANY
2045 W. Hunting Park Ave., Philadelphia
Offices in all principal cities

LINK-BELT Vibrating SCREENS

When inquiring specify EP1109 ... see information request blank, pgs. 14-15



Low Lift Electric Platform Truck
with 2000 lb. Capacity Crane
—Capacity: 6000 Lbs.



Center Control Tilt
Fork Truck—Capacities:
Up to 25,000 Lbs.



High Lift Electric
Platform Truck
—Capacities: Up
to 60,000 Lbs.



YALE
PHILADELPHIA, PA.

Please send me without obligation your series of folders giving full information on the complete line of Yale Electric Trucks.

Name: _____

Address: _____

YALE IF IT'S AN ELECTRIC TRUCK YALE BUILDS IT!

Whatever the need...whatever the load...there's a specialized Yale Electric Truck ready to do the job with greater efficiency!

The trucks illustrated are representative of the range and capacity of Electric Trucks that Yale offers industry. The complete line is covered in a series of folders giving full specification and construction data.

SEND FOR THEM.



When inquiring specify EP1110 ... see information request blank, pgs. 14-15



To secure a neat, attractive, leakproof package of patching plaster, The Rutland Fire Clay Co., Rutland, Vt., puts the material in cartons lined with paper bags. Closing of the filled bags is accomplished with a high speed Union Special filled bag closing machine which produces a strong, sift-proof sewed closure.

Advantages of this method of bag closing as compared to stapling formerly used include: faster production; less labor; saving due to difference in cost of thread and staples; quick adaptation to different size bags; potential production increases; easy folding over of bag tops because carton prevents intucks from expanding fully.

If you want to know more about this method of bag closing or have other bag closing problems, write to Union Special today. UNION SPECIAL MACHINE CO., 442 N. Franklin St., Chicago, Illinois.

UNION SPECIAL Originator of filled bag closing machines

When inquiring specify EP1111 ... see information request blank, pgs. 14-15

STANDARDIZED PARTITIONS

for
Stock Rooms
Tool Rooms
Locker Rooms
Department
Divisions

Temporary or
Permanent

Easily Installed —
Quickly Rearranged



No. 130 Acorn Enclosure Panels

Features—Protect against theft or other loss of tools, stock, etc. . . . give perfect circulation of light, heat and air . . . organize plant layout.

Any Workman Can Install or Rearrange—for these Acorn Wire Mesh Partitions come in standard panels which are perfectly adaptable to your requirements, quickly re-adapted to new changes.

Low Cost—Tell us kind of enclosure you want and we'll quote, without obligation. Prices will surprise you.

New Acorn Catalog FREE . . . Ask for it.

ACORN WIRE AND IRON WORKS
5907 S. LOWE AVENUE
CHICAGO

When inquiring specify EP1112 . . . see information request blank, pgs. 14-15

NEW LITERATURE

The following literature has been issued recently by manufacturers of the products discussed and is available to process production executives on request. Address requests to the publishers by using handy request form, pages 14-15, or write to the manufacturers direct.

Potentiometer Recording Systems

A 15-page, illustrated booklet provides complete data on these instruments for use in recording industrial temperatures. Cut-away photographs give concise pictures of the instruments' designs. These are supplemented by close-ups of individual working parts, enhancing the booklet's readability. Descriptive text and specifications complete the presentation of the product. Booklet 190-3 available upon request.

FOXBORO CO., Dept. EP, Foxboro, Mass.

When inquiring specify EP1113 . . . see information request blank, pgs. 14-15

Electrical Measuring Instruments

A 66-page, condensed catalog lists this company's entire line of instruments for research and routine testing in laboratory, plant and field. Such items include standards, galvanometers, dynamometers, bridges, potentiometers, photometric apparatus, primary elements, etc. Each standard item is briefly described and most principal ones are illustrated. Catalog E available upon request.

LEEDS & NORTHRUP CO., Dept. EP, 4934 Stenton Ave., Philadelphia, Pa.

When inquiring specify EP1114 . . . see information request blank, pgs. 14-15

Heat Transfer Applied to Constant Temperature Laboratory Equipment

Bulletin 305, available upon request, gives some pointers on "what to think about when you buy constant temperature laboratory equipment." Included are a brief review of heat transfer principles and an outline of technical considerations affecting rate of heat transfer, variations in quantity of heat required, attributes of peak performance, and various aspects of efficiency.

PRECISION SCIENTIFIC CO., Dept. EP, 1737 North Springfield Ave., Chicago, Ill.

When inquiring specify EP1115 . . . see information request blank, pgs. 14-15

Safety Appliances—Valves & Gauges

A 32-page catalog features numerous new and improved types of pop safety and relief valves and gauges for the oil, gas and general industrial field. Catalog is profusely illustrated and contains helpful engineering information such as discharge capacities, maximum temperature and pressure ratings as well as capacity and temperature conversion factors. Catalog 600 is available upon request.

J. E. LONERGAN CO., Dept. EP, 211 Race St., Philadelphia, Pa.

When inquiring specify EP1116 . . . see information request blank, pgs. 14-15

Barometric Condensers

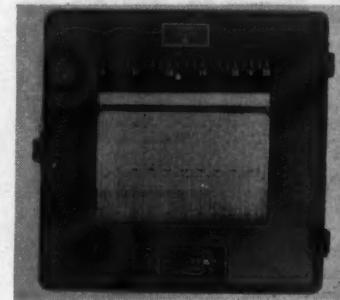
This two-color, 20-page booklet ably tells the facts about the maker's disc-flow, counter current type, barometric condensers. In addition to complete description, the booklet contains condenser's advantages, has diagrams showing operation, complete specifications, suggested arrangements and auxiliary equipment used with the condensers. Bulletin No. 9424 is available upon request.

INGERSOLL-RAND CO., Dept. EP, 11 Broadway, New York, N. Y.

When inquiring specify EP1117 . . . see information request blank, pgs. 14-15

To secure EQUIPMENT PREVIEW for your key men, turn to 'request slip' . . . pages 14 and 15.

Air-Operated Potentiometer Recording Controller



A new series of these instruments is said by the maker to incorporate three features unique in instruments of this kind.

Features—(1) Improved detecting mechanism, more sensitive than that required for recording, has been obtained by use of a single, calibrated

detecting cam. This cam will sense deflections of galvanometer pointer of less than 0.0001 in. without lost motion. By positioning a friction roller, cam positively determines movement of integral slide-wire contact, recording and control, actuating carriage.

(2) Coordination of measuring, recording and controlling operations is achieved by an integral recording and control mechanism. Slide-wire contact, recording pen and cam follower actuating the control cam are assembled as a unit on same rigid carriage. By using integral mechanism, need for linkages, belts or gears to transmit position of one unit to others is eliminated. Guaranteed accuracy is $\frac{1}{4}$ of 1 per cent of scale range.

(3) Control system is affixed directly to shaft of cylindrical control cam. Rotary motion of control-cam shaft makes for extreme simplicity.

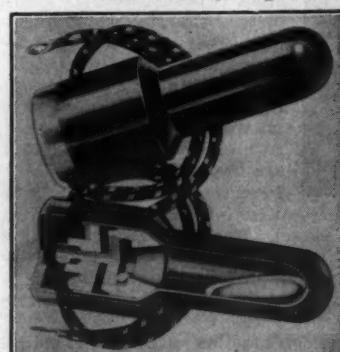
Description—Open-and-shut action or throttling action, with or without automatic reset, is available in air-operated models. Unit is highly accessible as entire mechanism can be pulled forward out of case and every moving part can be replaced by an inexperienced operator. Construction allows use of anti-vibration rubber cushioned mountings within case. Routine adjustments for standardizing circuit are made without opening the door.

FOXBORO COMPANY, Dept. EP, Foxboro, Mass.

When inquiring specify EP1118 . . . see information request blank, pgs. 14-15

Metal Mercury Switch

Hazardous, Explosive Conditions



Uses—Designed for use where abusive, hazardous explosive contact conditions exist. Because of steel shell enclosure, they appear to offer safety in any explosive atmosphere, and with rubber covering may even be used under water or other liquid. Has applications from wall switches

to motor starters.

Description—Switches are silent, unbreakable and non-inflammable. Double reduction feature prevents deterioration of mercury, eliminates possibility of contact interruptions, and increases reliability and efficiency of operation. These switches operate on small tilt with very little energy. Available up to 200 ampere capacity, and larger on special order.

DURAKOOL, INC., Dept. EP, Elkhart, Indiana.

When inquiring specify EP1119 . . . see information request blank, pgs. 14-15

EQUIPMENT PREVIEW

Ball Bearing Cartridge Unit

Self-Aligning . . . Seal Construction

Uses — Adaptable to wide variety of equipment.

Description — These Cartridge Units include standard bearings in cartridge type housing . . . centrifugal labyrinth seal lubricant and protects against foreign material. Bearing's outer race is ground on radius and locked in ground housing socket with locking nipple which permits 2 to 4 degrees misalignment in any direction.

Features — Self-aligning. Centrifugal labyrinth seal retains lubricant and seals bearing from all foreign materials in atmosphere. Wearing or glazing of felts avoided as they are assembled without pressure. Misalignment of shaft does not interfere with effectiveness of seal.

These Sealmaster Ball Bearing Cartridge Units are a new addition to the manufacturer's Sealmaster Bearing line.

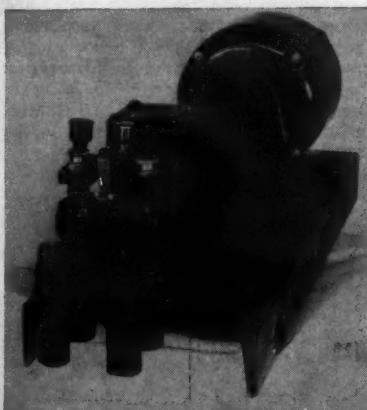
STEPHENS-ADAMSON MFG. CO., Dept. EP, 11 Ridgeway, Aurora, Ill.

When inquiring specify EP1120 . . . see information request blank, pgs. 14-15



Proportioning Pump

Adjustment Gauged by Special Calibrated Scale



Uses — Pump shown was constructed to handle a wood oil with one feed and a solvent with the other feed so these two liquids could be proportioned in any given ratio.

Description — Unit consists of liquid ends, drive mechanism, reducer, motor and base. Liquid ends incorporate a unique design

of pump body and check valve construction wherein both suction and discharge valves are incorporated in one check valve body. Pump body construction is the outside packed deep stuffing box type utilizing the displacement pumping principle. Design of check valve and pump body provides for simple streamline flow and promotes efficient action and minimizes possibility of vapor lock.

The wood oil and solvent, which this pump was built to handle, necessitated use of cone type of check valve with cones and seats of special alloys.

Operation — Proportioning principle consists of operating plungers at constant speed and varying stroke of each plunger as desired. Measure of adjustment is gauged by special calibrated scale and pointer mechanism which indicates at any time stroke being taken by plunger and capacity being delivered.

HILLS-McCANN CO., Dept. EP, 2370 Nelson St., Chicago, Ill.

When inquiring specify EP1121 . . . see information request blank, pgs. 14-15

New Literature (Con.)

Selected Editorials From "Link-Belt News"

An interesting 64-page booklet has been prepared in the Readers' Digest format. The booklet has been published in the "belief that there is more to business than just selling (or making) goods." Material consists of primarily human, interesting articles of interest to business men not for business information as much as for business inspiration. Editorials represent those for which the company has had many requests for reprints, and are of general interest. A copy is available upon request.

LINK-BELT CO., Dept. EP, 307 North Michigan Ave., Chicago, Ill.

When inquiring specify EP1122 . . . see information request blank, pgs. 14-15

Process Autoclaves

This handsome, 16-page catalog presents some of the more important points to be considered in methods of heating and agitation. Rapid developments in synthetic resin and varnish fields occasion special attention in this booklet to heating methods used. Such methods include, direct and indirect fired, hot oil, Dowtherm liquid, electric, Dowtherm vapor, etc. Catalog 1685 available upon request.

BLAW-KNOX DIV., Dept. EP, Blawnox, Pa.

When inquiring specify EP1123 . . . see information request blank, pgs. 14-15

Mercury Arc Rectifier

This 40-page bulletin, No. B8064, has been excellently handled to show to greatest advantage the company's line of standard multi-anode rectifiers, and special attention is paid to their new Excitron single-anode rectifiers particularly suited for lower voltage applications from 250 to 300 volts. Bulletin includes many shop and installation views with sections on performance data. Much general information is given on the operation of mercury arc rectifiers and their use in economical power conversion.

ALLIS-CHALMERS CO., Dept. EP, Milwaukee, Wisconsin.

When inquiring specify EP1124 . . . see information request blank, pgs. 14-15

Dynamic Precipitator

Bulletin No. 272 contains complete engineering data on the maker's Type D Roto-Clone—a combined exhauster and dust separator. Several pages are devoted to performance data on the equipment. Sufficient line drawings and photographs give the reader a good picture of the equipment and how it operates.

AMERICAN AIR FILTER CO., INC., Dept. EP, Louisville, Kentucky.

When inquiring specify EP1125 . . . see information request blank, pgs. 14-15

Pebble and Ball Mills

Proper selection of pebble or ball mills, mill operation, products best handled by these types of mills and specific details of the maker's line of mills is the subject of a 12 page catalog. Detailed specifications and capacities of these mills are supplied in table form. One interesting section is devoted to the selection of a grinding medium with suggestions for the proper type for both wet and dry grinding. Catalog 49 available upon request.

ABBE ENGINEERING CO., Dept. EP, 50 Church Street, New York, N. Y.

When inquiring specify EP1126 . . . see information request blank, pgs. 14-15

Instrument & Control Piping

This 16-page booklet is filled with informative drawings of this company's line of piping for power plants and the process industries. In addition to piping and accessories, there are shown numerous tool for tube fabrication. An interesting chart has been worked out for proper selection of the maker's tubing, tube coupling, and valves. Bulletin 42 is available.

PARKER APPLIANCE CO., Dept. EP, 17325 Euclid Ave., Cleveland, Ohio.

When inquiring specify EP1127 . . . see information request blank, pgs. 14-15

"Group" Type Wash Fixtures Lower Washroom Costs

Circular "Group" type wash fixtures serve up to 10 persons at one time,—the same as 10 single wash basins . . . Installation,—piping and connections — for one circular Washfountain is the same as for one single wash bowl. For the same number of persons therefore this piping installation is but one-tenth as much.

This is one of the many reasons for the rapidly expanding use of Washfountains, others being greater sanitation, low maintenance, and reduced water consumption per person.



Washfountains are made by the BRADLEY WASHFOUNTAIN Co., 2257 W. Michigan St., Milwaukee, Wis. Their Catalog 937 is available to those interested.

BRADLEY
WASHFOUNTAINS

When inquiring specify EP1128 . . . see information request blank, pgs. 14-15

Minimize Maintenance Costs on All Compressed Air Operated Equipment With ARIDIFIERS!

Up to 48% of your air operated equipment maintenance costs are due to moisture, oil or dirt in your air lines. Rapid tool wear, freezing, sticky valves, corroding and pitting of rings, pistons and operating parts —plus the need for daily cleaning—can all be avoided by putting an ARIDIFIER on every air and gas line to insure dry, clean air and gas.

ARIDIFIERS are easy to install, operate at no back pressure, have no rapidly wearing parts, need no maintenance and return their cost in a few months time. Ruggedly built in sizes from $\frac{3}{8}$ " to 10" for years of service.



WET DIRTY AIR ↑
DRY CLEAN AIR ↓
BRAIN

Send for Engineering Bulletin No. 939 for design, efficiency and operating details.

FREE TRIAL OFFER
We will gladly send you an ARIDIFIER for thirty days free trial so that you can see for yourself how quickly and completely it will cut your air tool maintenance costs. Write for details.

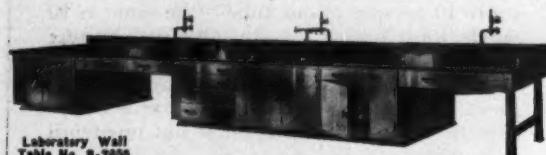
LOGAN ENGINEERING CO.
4900 Lawrence Ave., Chicago, Ill.

Offices in Principal Cities

The ARIDIFIER
Dries and Cleans Compressed Air

When inquiring specify EP1129 . . . see information request blank, pgs. 14-15

If You are Putting in
NEW LABORATORIES
or Re-equipping OLD Ones
Let Kewaunee Save for You - 3 Ways



Laboratory Wall
Table No. 8-3000

Kewaunee engineers, fresh from other installations for leaders in American Industry, bring you the advantage of far more than fine equipment moderately priced. You get the benefit of knowledge, experience, and skill that has come from 35 years of specialized leadership. You avoid waste of time, money and possible mistakes.

If you are interested in metal or wood furniture for Laboratories write, wire or phone us and a Kewaunee Engineer will see you promptly to discuss your problems and requirements. There is no charge for this service — and no obligation. Yet remember it costs no more to equip right with Kewaunee Laboratory Furniture.

Kewaunee Mfg. Co.
LABORATORY FURNITURE EXPERTS

C. G. Campbell, Pres. and Gen. Mgr.
322 Lincoln St., Kewaunee, Wis.

Eastern Branch: 220 E. 42nd St., New York, N. Y.
Mid-West Office: 120 Madison St., Evanston, Ill.
Representatives in Principal Cities.

When inquiring specify EP1130 ... see information request blank, pgs. 14-15

Specify
KARCITE
(Molded Ceramic)
SINKS

Free from distortion —
inert to solvents and
mineral acids (except
hydrofluoric). Will not
crack or break under ordinary
weight, weight shocks and
thermal shocks. Gray black color —
smooth-surfaced, dull
gloss finish. Lighter —
stronger — easier to clean. Write for Catalog.



Karcite Sink
No. 8-600

New Literature (Con.)

Refractory Products Reference Data

A handy, 20-page, pocket-size booklet has been prepared giving reference data on "Carbofrax", "Silfrax" and "Alfrax" brick, tile, shapes and cements. Miscellaneous reference tables are also included. General physical characteristics are given with special descriptive material for each type of product.

THE CARBORUNDUM CO., Dept. EP, Refractory Division, Perth Amboy, N. J.

When inquiring specify EP1132 ... see information request blank, pgs. 14-15

Sawing Handbook

Over 300 illustrations are included in the 160 pages of this contour sawing handbook—a treatise or text on the new metal cutting process. The book is full of data and charts with many details as to operation and application of contour sawing. Ways to cut machining costs are given as well as newly compiled data related to selection and cutting speeds of saws. Part Two consists of 50 examples of cutting machining costs, as submitted by users. Cost of book is \$1.00—no charge to those who submit requests on company letterhead.

CONTINENTAL MACHINES, INC., Dept. EP, 1301 Washington Ave., South, Minneapolis, Minn.

When inquiring specify EP1133 ... see information request blank, pgs. 14-15

Aluminum Ladders and Stages

Described in this 24-page catalog are 18 standard types of aluminum ladders and stages. Other sections illustrate special ladders made to customers' specifications. Extension ladders, single wall, step, scaffold and warehouse ladders receive considerable attention. Catalog is attractively done in two colors. Available upon request.

ALUMINUM LADDER CO., Dept. EP, 120 Adams Street, Tarentum, Pa.

When inquiring specify EP1134 ... see information request blank, pgs. 14-15

Electric Heating Element

This 64-page catalog displays a large line of electrical apparatus ranging from aircraft heaters and steam boilers to wax pots. Special description applies to the company's "Acrom Cast-X" electric heating element—an element which the maker states is "hermetically sealed, completely hydroscopic and immune to hot spots and oxidation, acid fumes, liquids, fire hazard, and unaffected by spillage." Complete specifications are included for all products and one section contains useful information on liquid heating data. Catalog E 40 available upon request.

ACME ELECTRIC HEATING CO., Dept. EP, 1217 Washington St., Boston, Mass.

When inquiring specify EP1135 ... see information request blank, pgs. 14-15

Joint Sealing Compound

Two types of these joint sealing compounds are described in detail — one for pipe lines and equipment carrying high pressure steam, gases, oil, gasoline grease and solvents — the other for hot and cold water, low pressure steam, compressed air, alcohol and brine. Important characteristics, with suggestions for proper use, are given for each type.

MACKSONS CO., Dept. EP, 125 Cedar St., New York, N. Y.

When inquiring specify EP1136 ... see information request blank, pgs. 14-15

Buyers' Data on Motors and Drives

This 28-page booklet, done in two colors, is designed to present a wide range of facts to help specifiers and buyers in estimating costs, types, and sizes of drive equipment and motors to be used under various operating conditions. Booklet is done in ready reference form for easy reading. It is packed with useful information on drives and motors.

ALLIS-CHALMERS CO., Dept. EP, Milwaukee, Wisconsin.

When inquiring specify EP1137 ... see information request blank, pgs. 14-15

Corrosion Resistance for Parts of Bearing Units

Corrosion-resistant treatment is used on all exposed parts of ball bearing transmission units. This chemical treatment involves no change in the physical properties or dimensions of the parts.

Process—Process involves formation of an oxide-layer which penetrates .0002" to .0003" into the surface of the metal, without changing its external dimensions. This protective layer, really a part of the metal itself, does not chip or peel, and is unaffected by temperature. Treatment is generally recognized by the distinctive jet-black finish it imparts to the metal.

According to U. S. Navy salt-spray corrosion tests, seals, shields and collars so treated resist corrosion ten to twenty-five times as well as untreated metal.

FAFNIR BEARING CO., Dept. EP, New Britain, Conn.

When inquiring specify EP1138 ... see information request blank, pgs. 14-15

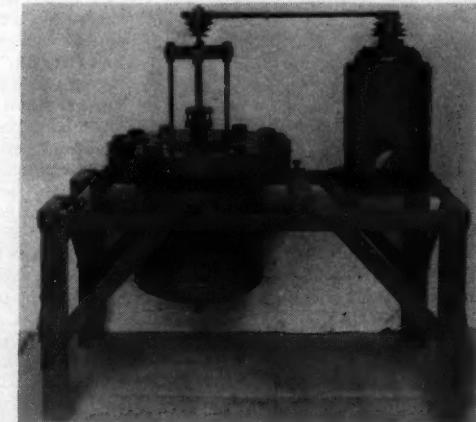
Injection-Type Mixer

Sharp Reductions in Reaction Time

Uses—For gas-liquid and liquid-liquid reactions running under pressure where sharp control over rate of addition of gas or liquid reagent is required. Many uses such as hydrogenations, air oxidations of oils, dyestuffs, blowing of asphalt, aeration of sewage, gas-scrubbing, flue gas absorption, bleaching of paper slurries, etc.

Features—In the instance of gas-liquid mixing problem, greater area of contact between gas and liquid phases is possible. With liquid-liquid mixing, absolute protection against local-over-concentration of reagent regardless of difference in viscosities, sets, or specific gravities between mixed liquids. Injection of gas or liquid at point of most intense mixing action and subjection of injected charge to shearing between ridges on stator and rotor makes possible better control over reaction velocity, sharp increases in reaction velocity and, in case of gas-liquid reactions, pursuit of reaction under low pressures. 12 different speeds available on agitator.

Performance—Kettles of this type equipped with the injection-type agitator have accomplished the "blowing" of



oils at 95 deg. F. in 22 hours, a reduction from 70 hours on standard equipment; also, a reduction from 4 hours to 1 1/4 hours in the hydrogenation of cottonseed oil; the distribution of CO₂ in resin kettles so as to prevent oxidation of the most sensitive skins.

Description—Kettle is designed to take 250 lbs. per sq. in. operating pressure and is jacketed for 150 lbs. steam pressure. Clave is of the tilting type and when tilted it rests at top bearing block in cradle portion of frame. Agitator member consists of turbine agitator which is overhung and underhung by hollow ring drum members which are perforated on their rotor-faced surfaces—the perforations acting as exit holes for material which is

NATIONAL Meter COMPANY

4191 FIRST AVENUE BROOKLYN NEW YORK

When inquiring specify EP1131 ... see information request blank, pgs. 14-15

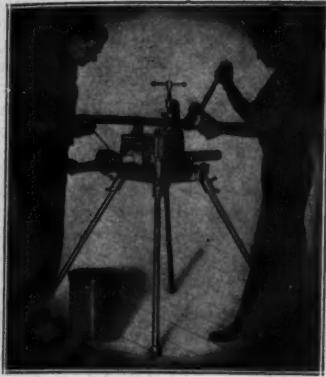
pumped to stationary hollow drum members. Kettle cover is equipped with two 2" sight glasses, one charging opening, one reagent feed line, a thermowell, and is bolted to kettle flange with 12 1" bolts. Steam is taken to jacket through rotary steam joint attachment to one of kettle supports and is discharged through pipe welded to bottom.

HENDRICK MFG. CO., Dept. EP, Process Div., Carbon-dale, Pa.

When inquiring specify EP1139 . . . see information request blank, pgs. 14-15

Power Pipe Threader

Extra Power for Dull Dies and Low Voltage



Safety latch prevents pipe tool handle from revolving if switch is accidentally turned off. Two men can work unit at same time without interference. Gears fully enclosed for safety.

Description—Threads pipe up to and including 2" — and bolts up to 1 1/2". Will operate geared tools with drive shaft to cut and thread pipe up to 8". Unit uses anti-friction bearings. Main driving gear revolves through oil bath. Chuck is opened and closed by turning chuck wrench, and chuck remains stationary, thus relieving gears of severe strain. Has Universal 1/2 H.P. motor—will operate on either AC or DC, 25 to 60 cycle. Choice of 110 or 220 volt motor.

BEAVER PIPE TOOLS, Dept. EP, 370 Dana Avenue, Warren, Ohio.

When inquiring specify EP1140 . . . see information request blank, pgs. 14-15

Acid Resisting Pump

Unusual Power for Small Pump



Uses — For evaporative coolers, chemical laboratories, plating industries, soil-less culture, and other industries requiring a small, quality pump.

Features — Pump is made of stainless steel. Has new type motor fan which pulls air up through motor, thus reducing motor temperature. Low price unit, from \$10.00 to \$16.00 list.

Description — Pump is made in three sizes ranging from 140 to 360 gallons per hour, with 2 ft. head. Horsepower varies from 1/100th to 1/55th for the largest size. Overall height is 8 1/2", and shipping weight approx. 5 lbs. Has rubber wall and base mountings for silent operation. Impeller is made of die-drawn stainless steel. Tube outlet is made of pure copper plated with block tin inside and out to prevent corrosion.

AIR-O-LINE CO., Dept. EP, 2118 Griffin St., Dallas, Texas.

When inquiring specify EP1141 . . . see information request blank, pgs. 14-15

New Literature (Con.)

"Sixty New Synthetic Waxes"

This pocket-size booklet of 16 pages lists some sixty synthetic waxes. Characteristics and general suggested uses are included. Waxes are grouped, generally, according to their hardness. Melting points, acid numbers and hardness ratings are shown for each type.

THE BEACON CO., Dept. EP, 85 Bickford St., Boston, Mass.

When inquiring specify EP1142 . . . see information request blank, pgs. 14-15

Rotary Positive Gas Exhausters & Boosters

Pressure-volume curves and operating characteristics are featured in this maker's line of gas exhausters and boosters. Various arrangements of exhausters and boosters are given for motors, gas and steam engine drives. Applications and installations show examples of heavy duty, high speed, special units, etc. 20-page, two color bulletin No. 32-33-B-11 mailed upon request.

ROOTS-CONNERSVILLE BLOWER CORP., Dept. EP, Connerville, Indiana.

When inquiring specify EP1143 . . . see information request blank, pgs. 14-15

"Shippers Handy Helper"

48 pages are needed to describe this company's line of shipping aids—a very complete line of products for marking, packaging, etc. Booklet is well indexed for easy reference. Many helpful suggestions are included for shippers such as "How to Mark Shipments for Export," metric conversion tables, numbering and invoicing export freight, etc. Catalog available upon request.

DIAGRAPH-BRADLEY STENCIL MACHINE CORP., Dept. EP, 3745 Forest Park Blvd., St. Louis, Mo.

When inquiring specify EP1144 . . . see information request blank, pgs. 14-15

Deep Well Water Pumps

"100,000 Raindrops from Underground for 1c" is title of new folder featuring various types of deep well water pumps. Open section view is shown of various oil and water lubricated pumps. Also included is the maker's Hi-Lift pump in which a helical rotor lifts water by a new principle. Copy of folder is available.

PEERLESS PUMP CO., Dept. EP, 301 West Ave. 28, Los Angeles, Calif.

When inquiring specify EP1145 . . . see information request blank, pgs. 14-15

Interlocking Suspended Arch

A thoroughly done catalog of 16 pages shows this company's interlocking suspended arch with its elements and assemblage. Profuse illustration and detailed description indicates use in various types of furnaces with photographs of installations in chain grate stokers, triple fired slab reheating furnaces, normalizing furnaces, glass tanks, boilers, etc.

FRAZIER-SIMPLEX, INC., Dept. EP, 400 East Beau St., Washington, Pa.

When inquiring specify EP1146 . . . see information request blank, pgs. 14-15

Rotex Screeners

Four-page folder describes and illustrates this line of enclosed, dust-tight screeners. Specifications are given in detail on screen surfaces from one to five, inclusive. Exclusive mechanical features are displayed separately, with brief descriptions.

THE ORVILLE SIMPSON CO., Dept. EP, Cincinnati, Ohio.

When inquiring specify EP1147 . . . see information request blank, pgs. 14-15

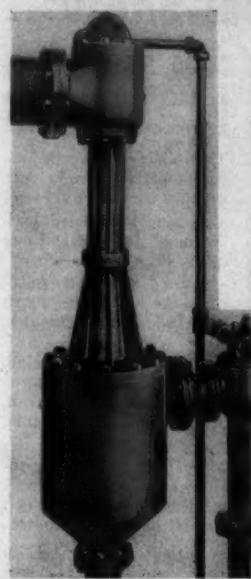
Stainless Steel Drums

An attractive folder features these stainless steel drums for shipment and handling of corrosive liquids, food products, industrial chemicals, solvents, pharmaceuticals, etc. One section illustrates the patented removable head drums of stainless steel. Available upon request.

STEVENS METAL PRODUCTS CO., Dept. EP, Niles, Ohio.

When inquiring specify EP1148 . . . see information request blank, pgs. 14-15

Get vacuum with... ELLIOTT STEAM-JET EJECTORS



Compact, simple, easy to install. Requires no maintenance. Designed to fit all vacuum needs. Elliott Ejectors are serving process industries everywhere.

EVERY ENGINEER WILL WANT THIS BOOK ABOUT VACUUMS

covering equipment, methods, installations for the maintenance of low-cost vacuum. Write for your copy today.



G-364



When inquiring specify EP1149 . . . see information request blank, pgs. 14-15



it's THE
3500 lb. cap.
TRUCK

Here's the truck that operators dream about. It handles 3500 lb. loads with such unbelievable ease that, after ordinary trucks working with a Red Streak is like taking a vacation. That's because of the special compound lift mechanism. Safer, too. Release check and safety hook sees to that. And with a roll as smooth as silk, it speeds production all along the line . . . Why not find out about one of industry's pets?

FREE TRIAL OFFER

THE YALE & TOWNE MFG. CO., PHILA., PA.

Gentlemen:

- Please send Red Streak for 15 day FREE TRIAL.
- Please send free folder.

Name

Address



When inquiring specify EP1150 . . . see information request blank, pgs. 14-15

You Examined "Stanzoils" at the Chemical Show...



Now Start Them Earning Profits in Your Plant!

Thousands of welcome visitors poured into the Pioneer Booth at the Chemical Show; —became acquainted with "Stanzoil" Industrial Gloves of Du Pont Neoprene; —learned how "Stanzoils" could help reduce costs in process and other industries.

Perhaps you missed New York—but don't miss "Stanzoils" especially if you use oils, acids, chemicals or solvents. Test "Stanzoils" under our liberal trial plan. Write today—naming the dangerous elements to which your employees' hands are exposed.

"Stanzoil" Industrial Gloves—made of oil- and chemical-resisting Du Pont Neoprene; unusual comfort and flexibility. Furnished in 4 standard styles for men and women.



THE PIONEER RUBBER CO.
239 TIFFIN ROAD, WILLARD, OHIO, U. S. A.
New York • Chicago • Los Angeles

MADE WITH DU PONT NEOPRENE

When inquiring specify EP1151 ... see information request blank, pgs. 14-15

COMPLETE PERFORMANCE DATA ON MOTOR-COUPLED PUMPS 10 TO 1600 GPM! NEW! FREE!

You and every other chemical or process user of centrifugal pumping units can find accurate, specific answers to individual pumping problems in this latest compilation of facts on modern Allis-Chalmers SSUnit Pumps!

Yes, it tells the money-saving story of the SSUnit Pumps that are bringing new pumping efficiencies . . . new savings . . . new profits in a variety of industrial and process applications everywhere. But it tells more!

You get handy tables on all of the following: 1. How to Figure Pumping Head; 2. Determination of Minimum Operating Speeds; 3. Friction of Water in Pipes; 4. Resistance of Valves and Valve Fittings to Flow of Fluids; 5. Head Capacities; 6. Dimensions of All SSUnit Pumps.

The valuable information in this book may easily pave the way to increased profits in your plant! Send for NEW Bulletin B-6018 today.



ALLIS-CHALMERS
MILWAUKEE - WISCONSIN

When inquiring specify EP1152 ... see information request blank, pgs. 14-15

New Literature (Con.)

Water-Cooled Furnaces

A new 32-page bulletin discusses the functions of water cooling for boiler furnaces, describes and shows by appropriate illustrations interesting details of the manufacturer's water-cooled furnace constructions and varied typical applications. Copies available upon request.

BABCOCK & WILCOX CO., Dept. EP, 19 Rector St., New York, New York.

When inquiring specify EP1153 ... see information request blank, pgs. 14-15

Hydrochloric Acid Absorption Systems

This eight-page booklet clearly describes the maker's absorption plants which are designed to produce strong acid in one pass, eliminating recirculation. Large-size type and good drawings are features which make the booklet attractive. Suggestions are given for the proper type of plant to use for three general types of gas conditions—Pure, Rich and Diluted HCl under varying conditions. Booklet available upon request.

FANSTEEL METALLURGICAL CORP., Dept. EP, North Chicago, Ill.

When inquiring specify EP1154 ... see information request blank, pgs. 14-15

Generator Air Coolers

Described in this 8-page folder are the company's K-Fin Air Coolers. Many photographs and construction drawings are used; and units' applications are fully explained for cooling air and hydrogen circulating through generator windings, transfer of heat to or from gases in chemical processes, cooling inert gases from annealing furnaces, preheating air for boilers, etc. Bulletin 1219 is available upon request.

GRISCOM-RUSSELL CO., Dept. EP, 285 Madison Ave., New York, N. Y.

When inquiring specify EP1155 ... see information request blank, pgs. 14-15

Corrosion Resistant Cast Iron Pipe

Bulletin describes a medium-priced, corrosion and heat resistant cast iron pipe for such services as laboratory waste lines, caustic lines, sulphite pulp mill blow pit waste lines, etc. Chemical properties and general applications are shown. Tabular comparison of corrosion resistance of Ni-Resist against unalloyed cast iron gives corrosion rate in milligrams loss per square decimeter per day when pipe is subjected to various corrosives at different temperatures. Available upon request.

WALWORTH CO., Dept. EP, 60 East 42nd St., New York, N. Y.

When inquiring specify EP1156 ... see information request blank, pgs. 14-15

Chemical-Proofing Wall Chart

In convenient chart form, for desk or wall use, this company's line of chemical-proofing products for various uses is illustrated. Seven products are listed, and for each is indicated the uses, resistance, how product is applied, coverage and package in which product is available. Tank lining, acid-proof cements and paints, durable coatings, etc., are products described. No. 37 is chart's descriptive number.

HEIL & CO., Dept. EP, 3088 West 106th St., Cleveland, Ohio.

When inquiring specify EP1157 ... see information request blank, pgs. 14-15

"Mass-Flo" Elevator-Conveyor

This two-color folder illustrates mass handling of powdered or granular material, by means of a single unit, in a vertical, horizontal or inclined direction. One section illustrates by means of line drawings various typical arrangements of the unit including the loop boot, combined L and horizontal, horizontal-inclined types, etc., Bulletin No. 726 available upon request.

JEFFERY MFG. CO., Dept. EP, Columbus, Ohio.

When inquiring specify EP1158 ... see information request blank, pgs. 14-15

BIFURCATOR

Integral Part of Duct System



Uses — New ventilating unit designed to remove corrosive, toxic, high temperature and hazardous fumes.

Features — Unit has highly efficient axial-flow pressure fan with non-overloading power characteristics. Designed to install as integral part of duct without directional pocket.

change in airflow. Special supports or platforms are unnecessary. Shaft seals, extended shafts and exposed bearings eliminated. Motor completely isolated from air stream in a through ventilated chamber, not merely a pocket.

Description — Units are available in sizes from 8" to 48" diameter, with a wide range of performances. Since units are designed for installation as integral part of duct system, they conserve space and can be mounted in any position from horizontal to vertical. Motors are usually of ball bearing construction, directly driving fan wheel, and are easily accessible, and because of location remain clean and cool. Bifurcator units of other metals or with lead or rubber protective coatings are available to withstand specific conditions. Catalog No. 30-D-1 gives capacity tables in detail.

AMERICAN MACHINE & METALS, INC., Dept. EP, East Moline, Ill.

When inquiring specify EP1159 ... see information request blank, pgs. 14-15

Cutting-Off Machine

Makes 1/32" Slice Off Tube Without Chipping

Uses — For cutting glass, quartz, ceramics, metals, commercial and semi-precious stones, etc., in the form of sheets, rods, tubes and blocks. Especially suitable for slicing all kinds of tubing.

Features — Makes extremely short cuts, difficult by any other means. For example, lengths of 1 1/2" diameter tubing as short as 1/32" can be cut off as easily and quickly as longer lengths, and with smooth, parallel, unchipped edges. True, clean cuts, without breaking or chipping material, are speedily made by means of a motor-driven 12" diameter, rubber-bonded abrasive wheel (0.04" or 0.06" thick).

Description — Machine consists essentially of a non-corrosive cutting table (adjustable for cuts of various angles), a cutting wheel direct-connected to a 115-volt, 60 cycle, AC motor, a centrifugal pump (for pumping water from a built-in pump to spray heads that play steady streams of water on cutting wheel), with whole unit mounted on a rigid, steel stand. Cuts up to 3 1/2" can be made on materials with flat surfaces. Rods, tubing, and the like up to 6" thick can be cut by rotating material as it is cut. Complete details are available in Bulletin EP2074.

AMERICAN INSTRUMENT CO., Dept. EP, 8010 Georgia Ave., Silver Spring, Maryland.

When inquiring specify EP1160 ... see information request blank, pgs. 14-15



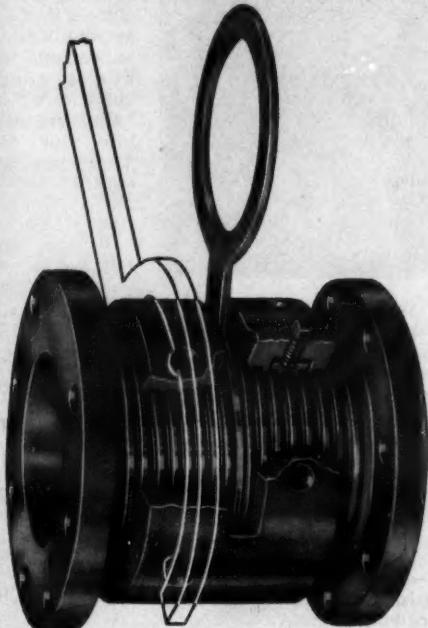
Standard Line Blind

One Man Change in Less Than Minute

Uses—General pipe line use—oil refineries, pumping stations, marine tankers, and industries where blind flanges are necessary for positive tightness.

Features—Positive shut off blind which can be changed by one man in less than a minute. Tight shut-off assured. Simplicity results in greater time saving. Has few parts.

Description—Spanner wrench is used on center jack sleeve to break the line, the spectacle is changed and the span-



ner jacks the line positively tight against the spectacle. Spectacle is grooved for gasket material to do away with loose gaskets. The line blind consists of two flange hubs, one with right-hand and the other with left-hand thread. Center sleeve with threads to accommodate the two hubs is slotted to permit entry of spectacle between two hubs. Blinds are made with standard gate valve flange dimensions. Units may be obtained in 4, 6, 8, and 10 inch sizes of any material to suit service conditions.

SHAND & JURS CO., Dept. EP, 917 Carlton Street, Berkeley, Calif.

When inquiring specify EP1161 ... see information request blank, pgs. 14-15

Baked Enamel Stripper

Cuts Stripping Time From Hours to Minutes

Uses—For quickly removing, in from fifteen seconds to five minutes, baked enamels of the urea-formaldehyde, resyl, glyptal, glycerol-phthalic anhydride and bakelite types as well as many long-oil types of japs and air-dry enamels.

Features—All base metals are left clean and bright. No smut, pigment deposits or attack on base metals as occurs when caustic strips are used. Enamel shrinks away from base. Non-caustic. Dilutes with water.

Description—Dilute concentrated stripper with three parts water by volume. Use at a temperature of from 130 to 160 deg. F. Stripper will work cold but will require longer stripping time. Immerse work on hooks or stacked in baskets and occasionally swish about. Remove, rinse in cold running water and dry by using hot water, blowing or sawdust. Comes in from 5 to 55 gal. drums with prices varying from 16c lb. in smaller lots to 12½c for larger shipments.

THE ENTHONE CO., Dept. EP, 440 Elm Street, New Haven, Conn.

When inquiring specify EP1162 ... see information request blank, pgs. 14-15

New Literature (Con.)

Fine Chemicals Data Book

An attractive, 32-page booklet describes 63 organic chemicals. Complete tables of physical properties are included enabling chemist to tell rapidly the boiling points, water solubilities, flash points, and other characteristics. Contains many hitherto unpublished facts about these fine chemicals. A glimpse of the future is given by listing many "research" products, samples of which can be supplied on request, as are copies of this booklet.

CARBIDE & CARBON CHEMICALS CORP., Dept. EP, 30 East 42nd St., New York, N. Y.

When inquiring specify EP1163 ... see information request blank, pgs. 14-15

Safety Clothing

New folder describes and illustrates a line of safety clothing including gloves and mittens, arm protectors, aprons, leggings and spats, welder's clothing, etc. Products shown are among 3,000 safeguards for industrial hazards—made of leather, asbestos, fireproof duck, etc.

INDUSTRIAL GLOVES CO., Dept. EP, 701 Garfield Blvd., Danville, Ill.

When inquiring specify EP1164 ... see information request blank, pgs. 14-15

Nickel Industry—1939 Review

A comprehensive survey of the nickel industry is contained in the 28 pages of this review. It deals with a multitude of uses for nickel and nickel alloys, with particular emphasis on recently developed applications. Table of contents indicates five major divisions of the review: (1) General survey; (2) World nickel consumption; (3) Products containing nickel; (4) Industries using nickel; and (5) Summary of nickel steels and alloys (with the principal industrial characteristics).

INTERNATIONAL NICKEL CO., Dept. EP, 67 Wall Street, New York, N. Y.

When inquiring specify EP1165 ... see information request blank, pgs. 14-15

Heat Treating Containers

This eight-page folder thoroughly treats of this maker's heating treating containers. Such products as carburizing boxes, containers for molten materials (cyanide, lead, salt, etc.), malleableizing boxes and muffles and retorts are pictured in profusion. Amsco Alloy analyses and representative uses are shown in one section of Bulletin No. 99.

AMERICAN MANGANESE STEEL DIV., Dept. EP, 389 E. 14th St., Chicago Heights, Ill.

When inquiring specify EP1166 ... see information request blank, pgs. 14-15

Oilless Bronze Bearings

A generously illustrated catalog shows standard and special types of "Metaline" oilless bronze bearings. Included are such applications as equipment that must avoid oil drippings; bearings located in inaccessible places, heavy duty and under water service, and operation at variable and excessive temperatures. Sizes and specifications are included in Catalog No. 4, available upon request.

R. W. RHOADES METALINE CO., INC., Dept. EP, Long Island City, New York.

When inquiring specify EP1167 ... see information request blank, pgs. 14-15

"Test Pilots"

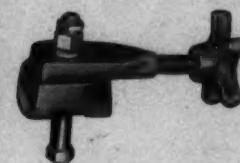
This manufacturer has issued a 12-page folder, attractively done in two colors, devoted to control processes, laboratory and plant, used in manufacture of glass enamels in his plant. The folder offers an interesting insight into specific manufacturing control. 15 applications of the company's products complete the folder.

THE PFAUDLER CO., Dept. EP, 89 East Avenue, Rochester, N. Y.

When inquiring specify EP1168 ... see information request blank, pgs. 14-15

NEW "LIGHTNIN" HAND CLAMP

INCREASES OPERATING CONVENIENCE



THE "LIGHTNIN" Hand Clamp still further increases the ease of handling "LIGHTNIN" Portable Models at the same time retaining all the operating advantages of "LIGHTNIN" Ball and Socket Clamp. Now just a turn of the hand wheel and the mixer is locked in position for your selected mixing action — no wrenches.

The double wedge with hand wheel tightens the unit more firmly and rigidly than ever and cannot work loose. Double bronze wedges, cadmium plated king pin and lock-nut, parkerized locking screw and aluminum hand wheel — prevent clamp rusting or "freezing" regardless of time it has been placed. Wedges fully adjustable for wear.

The "LIGHTNIN" Hand Clamp is now standard on "LIGHTNIN" Mixers — at no increase in price on all portable models $\frac{1}{2}$ H.P. and larger. Complete kit of parts, to add this convenience to your present models, available at low prices. Order now, giving serial number of present machine.

PRICES FOR NEW CLAMPING KIT

For mixers—C-2; C-4; S; D-1A; D-1 \$3.00

For mixers—S-2; S-3; D-2 to D-4B 4.00

For mixers—M-3 to M-6 7.50

MIXING EQUIPMENT COMPANY, Inc.

1085 GARSON AVENUE
ROCHESTER, N. Y.

When inquiring specify EP1169 ... see information request blank, pgs. 14-15

Turning a Crank
is LESS EXPENSIVE
Than Tipping a Barrel!



EASY TURNING

Same "Bucket" design as our rotary power pumps — no priming; automatic take-up for wear; easy turning. No other hand pump CAN BE like a BLACKMER.

FREE BULLETIN Gives Full Details On 15 Models...

Write today for Bulletin HP200. It contains the complete story on BLACKMER Hand Pumps, giving our low prices on all types and sizes shown.

BLACKMER PUMP CO., 1730 Century Ave., Grand Rapids, Mich.

BLACKMER
AUTOMATIC
TAKE UP FOR WEAR
ROTARY PUMPS
EXCLUSIVE
BUCKET DESIGN

When inquiring specify EP1170 ... see information request blank, pgs. 14-15



Pulsating Electro-magnet Vibrators

Make the most stubborn bins and chutes flow freely. 8 models—ranging from 4 lbs. to 500 lbs. in weight. Each with separate power control panel.

"Vibra-Flow"

Constant Weigh Feeders

SYNTRON COMPANY

110 Lexington Ave.,

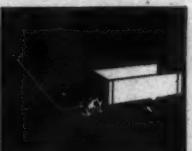
Homer City, Pa.

When inquiring specify EP1171 . . . see information request blank, pgs. 14-15

NEW LOW PRICES ON STEEL FRAME FLOOR TRUCKS



One piece frames



Jak-Tung Trucks



Molded-on Tires

scores of uses in every process plant

Get Our Prices and specifications on the type trucks you use . . . to save dollars, get longer service and speed handling of materials.

Many Styles, Sizes in our full line of box bodies, stakes, end racks, etc., to handle loose, bulk materials, or parts or packaged goods, etc. Also Jak-Tung ("lift truck type") trucks.

Features—Sturdy one-piece steel frames, metal or rubber tired wheels, Hyatt roller bearings, cast steel axle boxes and pockets, hardwood platforms.

Prices lower than many wooden frame trucks of like capacities.

Ask for Price List and Free Catalog

TRUCK & CASTER CO.
4012 Mississippi River,
Keokuk, Iowa

THOMAS

When inquiring specify EP1172 . . . see information request blank, pgs. 14-15

New Literature (Con.)

Stainless Steel Flexible Tubing

Engineering data is provided in this new bulletin on "Rex-Bellows", 18-8 stainless steel flexible tubing. Both divided and fully corrugated forms are shown, together with couplings. The new pressure and vacuum tight joint is shown—the joint being secured by a process of electric resistance circumference seam welding which eliminates soldering and brazing. Bulletin SS-16 is available upon request.

CHICAGO METAL HOSE CORP., Dept. EP, Maywood, Ill.
When inquiring specify EP1173 . . . see information request blank, pgs. 14-15

How To Heat Electroplating Baths

Bulletin GEA-3195 tells what heat does, how much heat to use, and generally describes the company's immersion heaters. Information is given on electric heating equipment including catalog numbers, prices and discounts, and additional information is given on automatic temperature-control equipment, with the answer to how to determine current requirements.

GENERAL ELECTRIC COMPANY, Dept. EP, Schenectady, N. Y.
When inquiring specify EP1174 . . . see information request blank, pgs. 14-15

Revolving, Tilting Welding Table

Folder in two color describes, with numerous pictures, this recently developed table for handling any size and shape or piece of welding. A dozen photographs show various uses for the equipment—illustrating how odd shapes are easily and quickly placed into position for welding. Bulletin No. 160 is available.

RANSOME CONCRETE MACHINERY CO., Dept. EP, Dunellen, New Jersey.
When inquiring specify EP1175 . . . see information request blank, pgs. 14-15

Acidseal Paints

A four-page catalog section describes this line of Acidseal paints—paints derived from rubber by a patented process. Included in this section are product's properties, directions for use, and includes an exact reproduction of different colors available. Maker stresses product's "unique resistance to corrosion, strong adhesion and elasticity." Section 9770 available upon request.

B. F. GOODRICH CO., Dept. EP, Akron, Ohio.
When inquiring specify EP1176 . . . see information request blank, pgs. 14-15

Washroom Equipment

This new folder presents recent developments in wash-fountains and multi-stall showers. Group washing fixture advantages are explained. Informative photographs and specifications conclude the presentation.

BRADLEY WASHFOUNTAIN CO., Dept. EP, 2237 W. Michigan, Milwaukee, Wis.
When inquiring specify EP1177 . . . see information request blank, pgs. 14-15

"45,000 Ways to Weigh"

This attractive broadside ably illustrates a large line of weighing equipment. Scales for all purposes—hoppers, bag, floor, pit-type, built-in, motor truck, track, floor, wheeled stand, overhead track, etc. Many installation pictures help make this an interesting presentation of weighing methods. Available upon request.

TOLEDO SCALE CO., Dept. EP, Toledo, Ohio.
When inquiring specify EP1178 . . . see information request blank, pgs. 14-15

Fluorescent Lamp Auxiliaries

Bulletin 392-FL describes these auxiliaries for use with fluorescent lamps. Contains all essential data such as wiring diagrams, dimensional sketches and electrical specifications. Done in two colors.

JEFFERSON ELECTRIC CO., Dept. EP, Bellwood, Illinois.
When inquiring specify EP1179 . . . see information request blank, pgs. 14-15

"Skrap-Trap" for Vacuum Cleaning

Collects Small Objects Without Injury



Uses—For use with portable electric blower when used for vacuum cleaning.

Features—Small objects that are unavoidably drawn into vacuum cleaner nozzle (such as bolts, nuts, screws, nails) are collected into this "Skrap-Trap" and so prevented from reaching and injuring suction fan blades . . . dust, dirt and lint are readily bypassed into dust bag.

"Skrap-Trap" also used to collect and salvage small parts or metal particles that otherwise could not be recovered . . . thus saving valuable waste material from benches or machines.

BREUER ELECTRIC MFG. CO., Dept. EP, 5100 N. Ravenswood Ave., Chicago, Ill.

When inquiring specify EP1180 . . . see information request blank, pgs. 14-15

Strapping Tool

"Does the Job in Five Seconds"

Uses—For the strapping of all kinds of containers, any product, under any shipping conditions.

Features—Equipped with automatic seal feed. Positive spring feed holds seals in any position. Magazine loaded with clip of 100 seals, available in three sizes . . . $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " strapping. Light weight . . . weighs 10 lb. 3 oz. Comfortable, easy-grip handles.

Operation—Manufacturer states this tool reduces strapping time to a five second job. Strapping is fed into tool; a few quick pulls of tension lever tightens strapping. Next a second lever is pushed forward, cutting the strapping and automatically sealing it. Complete operation requires but two motions.

THE STANLEY WORKS, Dept. EP, New Britain, Conn.
When inquiring specify EP1181 . . . see information request blank, pgs. 14-15



White Waterproof Fireproof Paint

Gives White Porcelain-Like Finish

Uses—For exterior or interior . . . on surfaces such as cement, concrete, face or common brick, cinder blocks, stucco, cast or natural stone, asbestos siding, pipe covering, plaster-board, fibre building boards, etc. Mixed to mortar consistency, used for filling cracks or holes in masonry.

Features—This paint, called Porce-Tite, is a chemical ceramic which manufacturer states bakes itself to the surface and is unaffected by most industrial acids or fumes. It expands on setting, thus securing the bond.

to the surface. Said to be easily applied with brush or spray, sets in three hours and dries in twelve hours . . . producing a smooth, hard, white, porcelain-like surface which repels grease and dirt. Can be washed with paint cleaners and washing compounds without marring or destroying finish.

Maker states it contains no oil, casein or cement but is a compound of several inorganic materials, chemically treated to give high waterproofing qualities . . . economical in cost, odorless, contains no harmful chemicals. Being white, gives good light reflection.

BEDARD & MORENCY MILL CO., Dept. EP, 101 N. Lombard Ave., Oak Park, Ill.

When inquiring specify EP1182 . . . see information request blank, pgs. 14-15

Glass Ampoule Sealer

Pulls Necks—Gives Perfectly Rounded Tops



Uses — This automatic electric machine designed for sealing glass ampoules.

Features — Through use of pulling feature, which pulls neck of ampoule while it is being sealed, apparatus is capable of sealing the ampoule with perfectly rounded top which is the type of seal most desired. One operator has plenty of time to handle feeding of sealing machine. Operation is simple. Elimination of chucks saves time in setting adjustment for various ampoule sizes.

Description — The "Amp-seal" weighs about 135

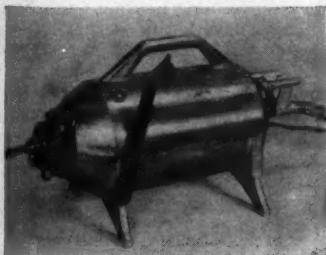
lbs., complete. Capacity is approximately 1,000 ampoules per hour, ranging in size from 1cc to 10cc. Works on rotary principle which does not require use of chucks.

PERFEKTUM PRODUCTS CO., Dept. EP, 300 Fourth Ave., New York, N. Y.

When inquiring specify EP1183 . . . see information request blank, pgs. 14-15

Water Line Cutter

Cleans $\frac{1}{2}$ " Dia. Lines, Passing Thru 90 Deg. Ells & Either Direction Tees



and gas lines, heating and cooling coils, etc.

Description — Made in two models. Smaller machine, Model A, weighs 45 pounds and has overall length of $17\frac{1}{2}$ ". Operation consists in fitting required length of cable and cutter into pipe and rotating cable by hand until obstruction is cleared. "A" model takes $\frac{1}{2}$ ", $\frac{3}{4}$ " and $\frac{1}{4}$ " cable for clearing $1\frac{1}{2}$ " to $\frac{1}{2}$ " water lines. "B" model operated the same way, uses up to one-inch cable and can clean sewer lines as large as six inches, removing all types of obstructions such as tree roots, cement, grease, etc.

PITTSBURGH PIPE CLEANER CO., Dept. EP, 212 Oliver Building, Pittsburgh, Pa.

When inquiring specify EP1184 . . . see information request blank, pgs. 14-15

Portable Dehumidifier

Removes Up To 75% of Humidity of Air Treated



Uses — For removing excess moisture from air in processing rooms, paper storage, rubber goods, powder, textile, chemical, pharmaceutical and munitions manufacturing, etc.

Features — Self-contained unit, simple in design, portable and low in operating costs. Said to remove up to 75% of the humidity from air treated. Also filters air, removing dirt, dust and pollen.

Description — Consists of metal cabinet equipped with centrifugal exhaust blower mounted in upper part of unit and automatically controlled by a humidistat which can be set at relative humidity desired. In bottom of unit is a grilled opening through which air is drawn. Moisture is discharged into drainpipe or removable catch-basin.

Operation — As moist air is drawn over or through this "Aqua-Sorb" the material deliquesces and slowly dissolves, forming a brine. This brine, highly concentrated at first, slowly trickles through the filter bed, absorbing more and more moisture from incoming air,

becoming progressively more and more diluted until it finally runs off through bottom opening.

Sizes vary from $12'' \times 12'' \times 27''$ high to $12'' \times 12'' \times 35''$ high to $15'' \times 15'' \times 44''$ high. Weights are 20 lbs., 40 lbs., 75 lbs. Prices range from \$24.50 to \$87.50.

AQUA-SORB CO., Dept. EP, 21 S. 16th St., E. Orange, N. J.

When inquiring specify EP1185 . . . see information request blank, pgs. 14-15

Vibrator Riddle

Portable . . . Light Weight



Uses — For separating the smaller quantities of material where it would be impractical or inconvenient to use large gravity screens and where these materials can be fed to riddle with ordinary shovel.

Features — Light weight (39 lbs.), portability. Operates from any light socket. Low cost . . . approx. 1/10 cent per hour at average plant lighting rate. Low first cost (\$87.50 f.o.b. Racine . . . complete unit with stand). Screen sections can be changed in a moment. Replacements supplied as low as 75 cents each.

Unit may be held in hands, operated on stand (adjustable for pitch) or aerially suspended through convenient studs provided at ends of springs and handles.

Powerful vibratory screening action, combined with system of rubber tipped, spring fingers, tapping the screen mesh, in synchronism with motor speed of 1750 rpm keeps screen mesh clean and free from blinding and provides largest possible capacity for so small an area (200 sq. in.)

UNIVERSAL VIBRATING SCREEN CO., Dept. EP, Deane Blvd. and St. Paul R.R., Racine, Wis.

When inquiring specify EP1186 . . . see information request blank, pgs. 14-15

Be SURE of the Utmost in SAFETY for INCREASED PRODUCTION!

There is no "give" in this Cesco No. 750 General Utility Face Shield, which accounts for its ability to "take" and shunt off splashes, sparks and flying particles in the chemical process and metal fabricating industries. Extremely light in weight, with entire window metal bound for added strength and rigidity, this Cesco No. 750 enables its wearer to proceed aggressively, confident of working with the utmost in face and eye protection and comfort.



Special Features of the Cesco No. 750 Face Shield

- Non-inflammable, non-pitting plasticene windows, 4" x 9", provide excellent facial protection, and snap into position for instant changing or removal.
- Positive acting friction joint permits easy tilting. No interference with goggles or regular glasses.
- Half visor protects gap between window and headband to prevent entrance of sparks or splashes.
- Headgear, adjustable to size, is fitted with a renewable genuine leather headband.

Make Your Own Test—You Can't Lose! Place your order for this Cesco No. 750 Face Shield today. Guaranteed to meet every quality you have a right to expect. Write

CHICAGO EYE SHIELD CO.

2337 Warren Blvd., Chicago • Illinois

When inquiring specify EP1187 . . . see information request blank, pgs. 14-15

Remove Uncertainty!

PROPORTION AND FEED THE REQUIRED VOLUME DURING THE PROCESSING PERIOD

Precision built, offering positive, dependable operation. Types and sizes available for pumping substances that must be kept hot or cold, such as sulphur, resin, paraffin, phenol, etc. as well as chemicals. Liquid ends produced from alloys best suited to the service.

Capacities from 0 to 1500 G. P. H. Pressures from 0 to as high as 20,000 P.S.I. Let us work with you on your problems.

Write for catalog.

HILLS-McCANN CO.

2370 Nelson St., Chicago, Ill.

HILLS-McCANN
Positive PROPORTIONING PUMPS

When inquiring specify EP1188 . . . see information request blank, pgs. 14-15



AT THE CHEMICAL EXPOSITION



DOUBLE ARM VACUUM MIXER—Single Packing Gland Construction (Center)

VIBRATING SIFTER AND RIBBON TYPE BLENDER (Left)

1 and 3 Qt. LABORATORY MIXERS (Right)

VERTICAL MIXERS—5 Qt. to 140 Qt. Capacity—equipped with special scraper blade to remove material adhering to the sides of bowl (Right)

AUTOMATIC LIQUID METER (Rear Left)

So much attention was attracted by these machines at the Show that we felt it worthwhile to remind you of them.

If you're interested in more information or want one of the READCO catalogs which illustrates and describes these machines as well as READCO'S complete line of Chemical and Industrial Equipment — write . . .

READ MACHINERY CO. INC. YORK, PA.

When inquiring specify EP1189 . . . see information request blank, pgs. 14-15



Unfailing in their dependability, Abart Speed Reducers play an important part in the chemical industry. Operating year in and year out at maximum efficiency — practically without attention — on kettles, tanks, agitators, and other machines for grinding, mixing and processing — they bring the security of unfailing performance. Over 75 types and sizes and practically any reduction to specification. Write for your copy of the Abart catalog.

GEARS: Cut to B/P or specifications. Accurate, high quality. Let us quote on your requirements.

Abart GEAR AND MACHINE CO.
MANUFACTURERS OF
Speed Reducers & Gears
1915-1935 GEAR AND MACHINE CO.

When inquiring specify EP1190 . . . see information request blank, pgs. 14-15

Marine Glue Kettle

From 80 to 550 Deg. F.—Accurate Control

Uses — Melting marine glue—made for temperatures from 80 deg. F. to 550 deg. F. with a close tolerance of 1 deg. plus or minus. Maker states the kettle can be used for any mastic or plastic up to 600 deg. F.

Features — Wide temperature range, and wide size range of from 5 to 50 gallons. Has accurate thermostatic control at any desired point on the temperature range. Because of special heating arrangement, former troubles have been eliminated, namely, bubbling because of non-uniform heating and disintegrating because of overheating.

Description — With all sizes, from 5 to 50 gallons, kettles are identically equipped. Multiple heating element surrounds entire cylindrical area and another similar heating unit covers the underside of kettle. A strong guard protects thermostat bulb submerged in kettle, though not preventing circulation or creating stagnant air pockets. Outside jacket is built so that it can be dismembered without difficulty. Kettle is heavily insulated to minimize heat losses. Special draincock can be easily cleaned without taking apart, and which prevents leaking and stays thermostatically heated at all times. Kettle is provided with hand agitator, and comes supplied with cover.

ACME ELECTRIC HEATING CO., Dept. EP, 1217 Washington St., Boston, Mass.

When inquiring specify EP1191 . . . see information request blank, pgs. 14-15



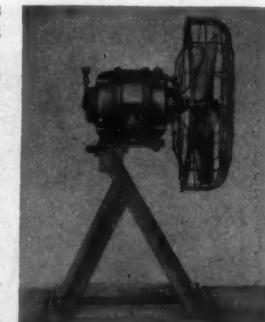
Transformer Cooling Fan

Portable — Increases Transformer Capacity

Uses — These portable units are normally spaced about transformer in such a position that fan wheel directs powerful stream of air upwards over transformer radiators at a high velocity. This produces a scrubbing action which effectively removes heat film from surfaces of all sections of cooling fins. Equally well adapted for cooling generators or other kinds of operating machinery.

Features — Increases normal transformer capacity without exceeding safe operating temperatures. Lowers operating temperature in event of emergency overloads. Portable feature permits rapid transportation to emergency centers and more flexible cooling arrangements. Air stream direction can be varied to suit best operating conditions—from horizontal to vertical — by simple adjustment of motor base adjusting screw.

Performance — Large public utility made test on 20,000 K.V.A. power transformer. Used 8 fans requiring 8 H.P.,



and maintained same temperature-rise of oil used for cooling transformer, capacity can be increased from 20,000 to 30,000 K.V.A. Proportionate results on smaller transformers (10,000 and 1,000 K.V.A.) obtainable with four or two fans.

Description — Unit weighs 145 lbs.; overall height 39", base 20" x 20". Uses 1 H.P. motor, 1750 R.P.M., 3 or 2 phase, 60 cycles, for all voltages—water-tight, ball bearing equipped. Has 20" diameter cast aluminum alloy blades. Capacity is 5,000 cu. ft. in free air, and 3,000 cu. ft. with 1-inch static pressure.

DIEHL MFG. CO., Dept. EP, Elizabethport, New Jersey.
When inquiring specify EP1192 . . . see information request blank, pgs. 14-15

Lines Thermal Electric Conduction System

Uses — For heating viscous liquids, and with special application for automatic operation of oil burners with "Bunker C" (No. 6 fuel oil).

Features — In use of "Bunker C" system utilizes a principle which permits heating the oil from a point inside the tank to point of use. Regardless of outside temperature or length of shut-down period, free flowing of liquid is assured. Savings in fuel costs because of practical use for low-grade "Bunker C".

Description — System consists of three main parts—transformer, tank unit and thermostat. Specially designed heavy duty transformer has broad range of length and



flow, automatically adjusted to operating conditions. Stock transformer cannot be used. Electrically insulated tank head, with outlets for suction and return, screws into standard tank tapping and extended with standard steel pipe to point of suction. Tank head is electrically heated. Simple thermostat has special extended thermal tube which is not attacked by fuel oil, and maintains oil temperature throughout system at predetermined and adjustable point.

Operation — Special transformer supplies electrical energy to make of entire pipe system a long heating unit—heating the entire flow of line. Oil entering at suction point is continually being heated as it flows to point of use. Surplus oil is further heated as it returns through return pipe to point of suction and is redrawn into system.

ALBERT PURDUE ASSOCIATES, Dept. EP, 303 Wooster St., New Haven, Conn.

When inquiring specify EP1193 . . . see information request blank, pgs. 14-15

Barrel Inspection Light

Has Watertight Lamp

Uses — For convenient examination of barrels, tanks, boiler tubes, etc.



Description — Has a heat-treated stainless steel spear for easy removal of foreign matter. Unit is made of brass, fitted with 25 watt T-6½ watertight lamp, stuffing gland for cable, cord strain relief clamp and hook. Overall length of light is 32 inches with maximum diameter of only 1½". Vaporproof models also available.

EUCLID RUBBER & MFG. CO., Dept. EP, 19730 Tyrone Ave., Cleveland, Ohio.

When inquiring specify EP1194 . . . see information request blank, pgs. 14-15

EQUIPMENT PREVIEW

Pyrex Watch Glass

Fire-Polished Edges Prevent Chipping



Uses — Designed for laboratory use where demand has existed for a chemically stable, more resistant watch glass.

Features — Each glass is carefully moulded. Both sizes have same radius of curvature for stacking convenience. Uniformly heavy walls provide greater mechanical strength, and the fire-polished edges prevent chipping. Glasses are chemically stable, having the desirable features of "Pyrex," and are heat resistant.

Description — Economically priced, these watch glasses are made in two sizes — 90 mm and 100 mm diameters. Packed in convenient units of 12, 144 to the case for easy handling.

CORNING GLASS WORKS, Dept. EP, Corning N. Y.

When inquiring specify EP1195 . . . see information request blank, pgs. 14-15

18-8 Type Arc Electrode

Stainless Steel Welding

Uses — To weld stainless steels which contain approximately 3½% molybdenum. Used in bleaching and dyeing operations where welding is done on acid-resisting pipes, agitator coils, evaporators, dye vat linings, pumps, rolls, etc.; and in the paper and pulp industry for equipment such as digesters, tanks, tubing, fittings, etc.

Features — "Stainweld C" gives weld metal of proper physical and chemical properties. Electrode coating prevents oxidation of weld metal and keeps deposited metal analysis virtually same as parent metal. Such welds are of high tensile strength and ductility and have similar corrosion resistance as parent metal.

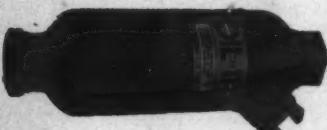
Description — This arc welding electrode, of the 18-8 type, is made in three sizes — ½", ⅜" and ⅜" by 11½" lengths. Shipped in 25 lb. packages.

LINCOLN ELECTRIC CO., Dept. EP, 12218 Colt Road, Cleveland, Ohio.

When inquiring specify EP1196 . . . see information request blank, pgs. 14-15

Air-Line Lubricator

Operates In Any Position — Will Not "Siphon Back" or Leak



Uses — Designed primarily for rock drill lubrication, it has many other applications on air operated tools.

Features — Operates in any position, and can be filled in either horizontal or vertical position. Unit will not "siphon back" or leak when air pressure is released from it. Has oil feeding adjustment which can be made without taking pressure off chamber and without interrupting drilling. Oil chamber made of forgings and steel tubing — stronger and safer construction than cast iron chamber.

Description — Needle valve regulated to give any required

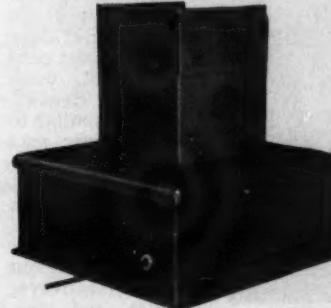
flow. Has large filler plug, and no special wrench is needed to loosen. Valve is provided with automatic action tension spring which maintains valve setting. Thread sizes are one inch, and either end may be connected to air line. Unit has been widely tested at temperatures ranging from sub-zero F. to 115 deg. F. Bulletin No. 2600 gives complete details with discussion of how friction heat causes trouble.

INGERSOLL-RAND CO., Dept. EP, Phillipsburg, N. J.

When inquiring specify EP1197 . . . see information request blank, pgs. 14-15

Vibrating Packer

Platform or Floor-Level Location



produces complete settling in minimum time. Low power consumption.

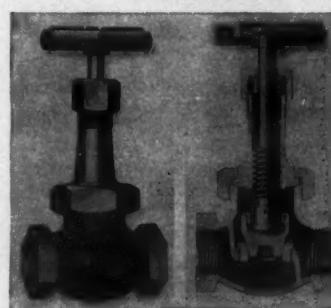
Description — Vibrating platform is mounted on coil springs and a balanced drive unit — Ajax-Shaler shaker. Two standard sizes — platform sizes of 18" x 18" and 28" x 30". Capacities are 75 lbs. and 500 lbs. 8" overall height for smaller unit and 11½" for larger. 1/12 HP and 1/4 HP needed.

AJAX FLEXIBLE COUPLING CO., Dept. EP, 201 English St., Westfield, N. Y.

When inquiring specify EP1198 . . . see information request blank, pgs. 14-15

Bronze Globe and Angle Valves

Plug-type Discs and Renewable Seat Rings



been proportioned to minimize wear at small openings and to permit tight closure even if faces are partially damaged in service. Each seat ring is matched to its companion disc to assure full bearing surface.

Stems have 60,000 lb. per square in. tensile strength with acme standard threads, and rounded stem heads to permit self-centering of disc. Bonnets are provided with heavy union bonnet rings and have machined seat on under surface to permit repacking under full line pressure when valve is wide open.

These valves are made in a wide variety of sizes . . . for steam, cold water, gas or oil . . . under widely varying conditions.

Ask for Circular 58 for complete details.

KENNEDY VALVE MFG. CO., Dept. EP, Elmira, N. Y.

When inquiring specify EP1199 . . . see information request blank, pgs. 14-15

**SOLVED-**

The stuffing box and "steam-fit" problem for all machines with steam- or fluid-filled cylinders

Thousands of these Johnson Rotary Pressure Joints are proving in daily service that it pays to replace the old style "stuffing boxes" and "steam fits" with this totally different and better pressure joint. Bearing surfaces are a new type of carbon-graphite; entirely self-lubricating. The joint is retained by a seal ring, eliminating packing. The joint is pressure-sealed—the greater the pressure the tighter the seal. Ingenious provision for angular or lateral misalignment eliminates a major fault of former types.

A wide range of types are available including joints built for siphon pipe drainage which increase efficiency and speed up production. If you operate dry cans, slushers, calenders, ironers, roofing machines, or other equipment in which steam or liquid is introduced into rotating cylinders, you will be interested in Johnson joints.

Product of The Johnson Corporation

222 WOOD STREET, THREE RIVERS, MICHIGAN

When inquiring specify EP1200 . . . see information request blank, pgs. 14-15

SURETY Patented TURN-CUFF GLOVES

Eliminate Hand Hazards — Save Money



Workers, whose duties involve immersion of hands in liquids, are always in danger of Dermatitis, etc. Surety's Turn-Cuff Rubber or Neoprene industrial gloves overcome this hazard by preventing liquids from running inside gloves or onto arms and clothing. Available in various weights, lengths and colors—straight or curved fingers. Ask your supplier or write for full information.

**Free DESCRIPTIVE FOLDER on ALL-NEOPRENE GLOVES**

—their uses and advantages

All-Neoprene Gloves (DuPont's man-made rubber) are saving money for hundreds of users. They resist acids, chemicals, naphtha, oils, etc. Send for the free folder today.

Surety
THE RUBBER CO. Carrollton, O.

When inquiring specify EP1201 . . . see information request blank, pgs. 14-15

SIMPLEX ADJUSTABLE TANK SUPPORTS Save 5 Ways!



Your tank installations can be made with greater economy and efficiency if Simplex Adjustable Tank Supports are used. They save 5 ways—

1. Costly, unnecessary cast or fixed cradles are eliminated.
2. Adjustment of tanks for leveling and gravity flow is simple, positive and permanent.
3. Simpler saddles welded to the tank or cradle band at the tank shop minimize installation cost.
4. Air circulation and temperature control are greatly facilitated.
5. Feed and drain pipes are readily accessible, and the open floor provided, facilitates flushing, obviating bacterial pockets.

Simplex Adjustable Tank Supports are available in 28 sizes with 12 types of saddles (5 shown on left) for better, cleaner, safer, more flexible support of metallic, wood or ceramic tanks, vats, etc.

Bulletin 835 containing engineering data and installation drawings will be mailed upon request.

TEMPLETON, KENLY & CO.
CHICAGO

Sole Manufacturers



SIMPLEX
GOLD MEDAL AWARD SAFETY JACKS

When inquiring specify EP1202 . . . see information request blank, pgs. 14-15

"ACID-PROOF" YOUR FLOORS with DURA-TRED!



Correct the unsightly, destructive effects which mineral acids work on your floors using a single, quick, easy application of Dura-Tred over-all.

Wherever dipping, pickling, plating and etching is done—wherever nitric, sulphuric, muriatic, and other acids or compounds like chrome, etc., are used—Dura-Tred is highly resistant. Defies damage to floors.

Easy to Apply Over Concrete—Metal—Masonry . . .

Dura-Tred comes to you completely factory-mixed. Apply directly from the package on floors subject to extreme acid or wearing conditions, inside or outdoors.

Bear in mind—Dura-Tred will not only combat acids; it will handle your heaviest load without leaving any mark because it is solid-wearing service throughout. Let a small order prove that Dura-Tred will reduce your acid problems to a minimum. Write!



Get Full Details — Descriptive Circulars — No Obligation!

DURA-TRED COMPANY
216 NORTH CANAL ST.
CHICAGO, ILLINOIS

Choice Territories Still Open for Factory Representatives

When inquiring specify EP1203 . . . see information request blank, pgs. 14-15

Abrasive Blasting Mill Small Airless Unit for Smaller Jobs



Uses — Particularly adapted for use where small products in limited loads are cleaned and finished or where a small auxiliary machine is required.

Features — Cleans without compressed air by using centrifugal abrasive blasting unit which throws metallic abrasive, under perfect control, upon work being cleaned. Operation similar to that of larger machines. Cleaning chamber is formed by an endless apron conveyor made of abrasion resisting rubber. Movement of this conveyor tumbles and cascades work directly beneath blasting unit in such way that entire load is exposed to full effect of blast.

After striking load, abrasive falls through perforations in conveyor to hopper connected with bucket elevator, which picks up abrasive and carries it to overhead abrasive separator and storage hopper from which it feeds by gravity for reuse. One 3 HP electric motor provides power.

AMERICAN FOUNDRY EQUIPMENT CO., Dept. EP, 555 S. Brykit St., Mishawaka, Indiana.

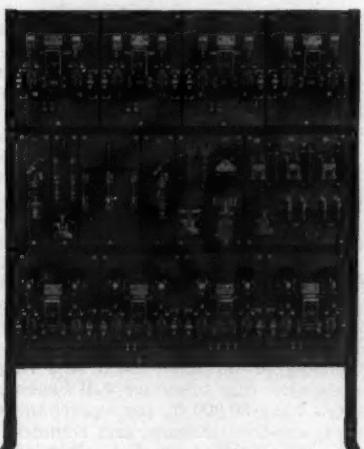
When inquiring specify EP1204 . . . see information request blank, pgs. 14-15

Dynamic Braking Control for A.C. Crane Hoists

For Existing or New Cranes

Features — Eliminates mechanical load brake on crane and is operated entirely from A.C. source of power. Used with any standard A.C. wound rotor hoist motor. No conversion units needed and no additional collection bars, thus making installation easy on existing or new cranes. To install on existing crane, simply disconnect pawl, band or similar locking device which causes mechanical load brake to operate in lowering direction, thus permitting motor and gearing to be free-running in both directions.

Advantages — Power saving, elimination of upkeep cost, faster lowering speeds, ability to permit very short, accurate inching movements of load. Hyper-synchronous speeds obtained on last two points of master switch allowing motor to run at speeds above



synchronous speed of motor, as much as 50%. These speeds obtained only with overhauling loads and can be secured on any crane where this higher speed is desired. These increased speeds particularly suited on magnet cranes, where lowering of an empty magnet may be speeded up on its return for another load.

ELECTRIC CONTROLLER & MFG. CO., Dept. EP, 2700 E. 79 St., Cleveland, O.

When inquiring specify EP1205 . . . see information request blank, pgs. 14-15

Constant-Level Oiler

Unbreakable—Visible—Automatic

Uses — For automatically maintaining proper oil level in ring or ball bearings, gear and pump housings, etc.

Features — Unbreakable reservoir needs only one filling to lubricate a bearing three months or longer, without attention. Visible oil supply shown at a glance. Automatic maintenance of proper oil level reduces maintenance expense, bearing failures, waste of oil and grease, oil-soaked motor windings, damage to materials, fire hazards, etc. Has oil level adjustment.

Description — Re-inforcing ribs used on unbreakable reservoir for added strength and to supply better grip when handled. The reservoir is attached to lower casting by threaded spout — easily removable for cleaning and refilling—important in dark, hard-to-get-at places. Made in one, two, four and eight ounce capacities with all bottles interchangeable. Two styles for standard surge and high surge levels having side outlets only and also side and bottom outlets for bottom connection or for draining purposes.

TRICO FUSE MFG. CO., Dept. EP, Milwaukee, Wis.

When inquiring specify EP1206 . . . see information request blank, pgs. 14-15



Steam Traps

Operating Pressure up to 200 lbs.

Two new traps have been added to this manufacturer's line.

. . . #19 and #20, superseding their #11 and #12.

Features — Designed along general lines of their larger traps. Head and body of these new traps are connected together with four bolts in flange type connection similar to that of larger traps. A bronze hexagonal bucket guide tube and the valve and lever mechanism, with no pins or pivots, are features of new design. Also there is a drain plug at bottom.

Maximum operating pressure of these new traps is 200 lbs. as compared with 150 lbs. for the old traps. Likewise these have a greater capacity and are capable of handling more dirt and foreign matter.

V. D. ANDERSON CO., Dept. EP, 1954 W. 96 St., Cleveland, O.



When inquiring specify EP1207 . . . see information request blank, pgs. 14-15

EQUIPMENT PREVIEW

Of Chemical Process Industries

New Chemicals New Materials
 New Equipment New Applications
 —of special interest in
 Chemical and Process Manufacturing

CCA

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covering all manufacturing plants in Rubber, Chemicals, Paint, Glass, Explosives, Fertilizers, Rayon, Brick and Tile, Plastics, Soap, Paper, Glue, Brewing, Distilling, Sugar, Coke, City Water Treatment, Oil Refining, Leather Tanning, Cement, China and allied lines.

Protective Coatings



PROF. H. McCORMACK,
 Director, Department of
 Chemical Engineering,
 Armour Institute of Technology.

The application of a coating to protect a surface from some undesired change is old in industry. The manufacture of such coatings is also an old and well established industry.

It would seem, therefore, that by this time the supplier and the user should thoroughly understand each other.

Material coming to this desk indicates quite definitely that this is not true. Both producer and consumer of protective coatings realize that the final test to evaluate their usefulness

is a service one. "John Smith used this protective coating under such and such conditions for blank years and found the results to be thus and so." This is the only type of statement of interest to the consumer. No long dissertation replete with superlatives can take its place. Lacking such information, price is of no interest to a consumer, for in the past he has had a few refinishing jobs which have thoroughly cured him of seeking a protective coating at a lower cost without definite information as to its satisfactoriness under his service conditions. Several instances could be cited where a saving of a few dollars on a protective coating have been followed by a cost of several thousand dollars for a refinishing job.

This article should also serve as a protective coating for the editor if the manufacturers will only read and profit from it; at least fifty per cent of the rejected material, month after month, is of the type referred to.

H. McCormack

Technical Advisory Editor.

EQUIPMENT PREVIEW

28-Tube Filter

Tube Life Up to 1,120,000 Gallons



designed seat plates providing an effective seal.

Description—Filter consists of a shell, base plate, and cover, with 28 replaceable filter tubes. Tubes are made of cotton yarn, wound by a special method on screen cores. Yarn forms a series of filtering sheets through which the liquid must pass, thus removing both coarse and finely divided impurities without the blinding effect common to surface filtration. Standard materials are steel and brass, although stainless steel and various alloys are furnished on special order for handling corrosive liquids.

COMMERCIAL FILTERS CORP., Dept. EP, 41 Macallen St., Boston, Mass.

When inquiring specify EP1208 . . . see information request blank, pgs. 14-15

Flame-Hardening Process

Raises Hardness Degree



Uses—Maker states that this Vertical Combination Method has proven advantageous in many applications such as rubber engraving rolls, embossing rolls, calendar rolls under certain conditions, different types of mandrels where excessive pressure or wear must be considered, certain applications for rolling mills, dough machines, wearing surface of bearers in printing machinery, etc.

Features—New process offers a higher degree of hardness in steel and alloy iron rolls, mandrels, etc. In all rolls that have been hardened by this method, no measurable distortion has been detected. Overlap from flame of old progressive method of hardening is eliminated because new process is continuous, uses a large number of flame tips and is followed immediately by a water quench spray.

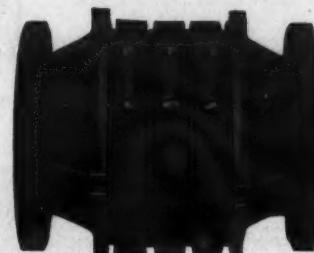
Performance—By using this process, the company has been able to raise the hardness of 65-70 carbon steel cylindrical objects to approximately 90 or better on the Type "C" Scleroscope. Process has also been tested considerably in hardening a special dry sand alloy cast iron known as "Farrelflame," and have obtained an average hardness of 80 on the "type C" Scleroscope. Full details of the process may be obtained from

FARREL-BIRMINGHAM CO., INC., Dept. EP, Ansonia, Conn.

When inquiring specify EP1209 . . . see information request blank, pgs. 14-15

ABSORB

Expansion In Process Lines
 compactly and without maintenance



Use BADGER Corrugated Type Expansion Joints

We say "compactly" because BADGER Expansion Joints take up no more space on a pipe line than the average fitting. They are particularly ideal for lines in tunnels or in cramped quarters. And this compactness is economical, too, when insulation is necessary. We say "without maintenance" because the BADGER Expansion Joint does not use packing, hence requires no servicing.

For conditions that would attack copper, we can supply stainless steel expansion joints. Write for descriptive bulletin.

E. B. BADGER & SONS CO.

75 PITTS ST., BOSTON, MASS.

When inquiring specify EP1210 . . . see information request blank, pgs. 14-15

Install Farval DX Systems



For Lubricating
 your small ma-
 chines . . . Larger
 Farval Systems
 for All your other
 equipment, no
 matter how many
 bearings

Farval supplies permanent and assured protection against bearing trouble due to faulty lubrication. For, with your regular grease gun (for the DX), or with a few strokes of the lever at the Farval Central Station, the operator forces oil or grease under high pressure, and in exact measured quantities, to each individual bearing—missing none.

Whether your machines have 3 points of lubrication or 5,000, Farval builds a dependable System to supply correct lubrication throughout machine life and to amortize itself quickly.

The Farval Corporation, 3257 East 80th Street, Cleveland, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Manufacturers of
 Automotive and Industrial Worm Gearing

In Canada: PEACOCK BROTHERS LIMITED

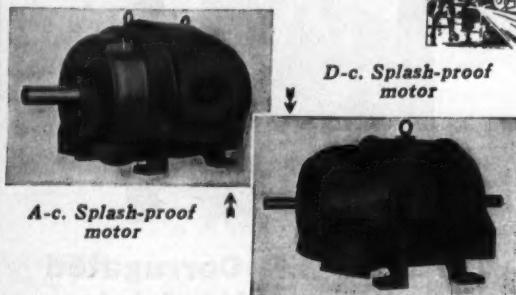
FARVAL

CENTRALIZED SYSTEMS OF LUBRICATION

When inquiring specify EP1211 . . . see information request blank, pgs. 14-15

RELIANCE AC DC MOTORS

Splash-proof



For drives where equipment is cleaned with a hose or motors are exposed to splashing liquids, these motors afford effective, low-cost protection. All windings receive special insulation treatments as an added safeguard against hot, humid atmosphere. The motors develop the same ratings as their open counterparts and require no more floor space. A watertight junction box prevents shorts and grounds where connections are made. You will find that they last longer and cost less to maintain.

Reliance Electric & Engineering Co.
1092 Ivanhoe Road Cleveland, Ohio



Branches and Representatives in Principal Cities

When inquiring specify EP1212 ... see information request blank, pgs. 14-15

LIQUIDS POWDERS CRYSTALS COLLOIDS in DRUMS BARRELS CARBOYS or CYLINDERS

Can be stored 6 tiers high with the new Barrett Racks for horizontal or vertical storage. Denting and damaging of containers is eliminated, handling hazards are greatly reduced and every container is readily accessible. They cannot roll off or fall down.

It is a waste of space to stand barrels and containers on the floor level only—storage space costs can be cut to one-fifth of present costs by convenient rack-stacking six high. It is good house-keeping and sound economy to use the Barrett Storage Rack System. Also made for boxes and skids.

Write for Catalog 501 covering Storage Racks, Portable Elevators, Barrel Skids, Drum and Barrel Duster Racks, Carboy Powers and other handling Equipment for the process industries.

B A R R E T T

BARRETT-CRAVENS CO.

3276 W. 30th St. Chicago
Representatives Everywhere



When inquiring specify EP1213 ... see information request blank, pgs. 14-15

Vacuum Filling Machine For Round Cans, Bottles All Types, Sizes

Description — This improved equipment consists of main suction hose connecting source of liquid supply and a multiple filling head, head assembly, a second hose connecting head and an overflow bottle mounted with vacuum pump and driving motor on common base. The head with its two and three-tube assembly is entered into container so shoulders back from end of tube act to seal containers against entrance of air.

Operation — Pump creates vacuum in containers, liquid is lifted through main suction hose, passes into containers through angular openings between outer tubes and smaller-inner tubes through which air is exhausted. Delivery is maintained as long as head is held in position on containers, ceases as soon as head is lifted to break vacuum. Any small amount of liquid passing through air suction hose is delivered into overflow container. Amount of liquid in overflow container is visible so container can be emptied before any can travel over into pump. A glass sight trap, placed ahead of pump, catches vapors and condensate.

Filling handles are adjustable for various sizes containers ... can be used on a variety of liquids, one after another, since machine is self-cleaning. Filling capacity ranges from 50 to 150 gross containers per day, depending on type and operator's speed.

SCIENTIFIC FILTER CO., Dept. EP, 8 Franklin Sq., New York, N. Y.

When inquiring specify EP1214 ... see information request blank, pgs. 14-15



one for closing and one for cracking and throttling. Valve is cracked and throttled against side of disc from throttling seat, protecting line of closure from destructive action of high velocity steam. Valve has non-heating handle. Built in sizes from $\frac{1}{2}$ " up.

OSTLIND VALVE, INC., Dept. EP, Portland, Oregon.

When inquiring specify EP1215 ... see information request blank, pgs. 14-15

Moisture & Oil Trap

Valve Seat Always Submerged

Uses — Primarily designed for use with the separating chamber of the Adams "Poro-Stone" compressed air filters and the maker's cyclone separators.

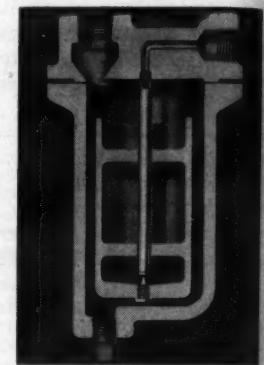
Features — With valve seat always submerged, eliminates oil and grease collected from filter without permitting accumulation to exist within shell. Removal of four nuts permits dropping of shell and float for easy and complete examination of float, valve and valve seat without disconnecting from the filter or piping.

Description — Operates at 100 lbs. or lower pressure. Design uses an open aluminum bucket float operating on a stainless steel stem. Valve and seat are stainless steel, heat treated. Pipe plug and sump located directly below inlet nozzle from which to clean out accumulated rust and scale without disassembling trap.

Operation — Incoming water and oil directed to side of shell through elliptical entrance nozzle. Trap is primed with clean water and buoyancy of float elevates valve into seat. Additional oil entering trap floats on water surface and overflows into bucket. As enough oil and water accumulates in open buckets to overcome buoyancy, float drops and uncovers valve seat built into lower end of hollow vertical spindle. Oil and water ejected from float until buoyancy again causes float to rise and close off discharge.

R. P. ADAMS CO., INC., Dept. EP, 55 Chicago St., Buffalo, N. Y.

When inquiring specify EP1216 ... see information request blank, pgs. 14-15



Steam Control Valve

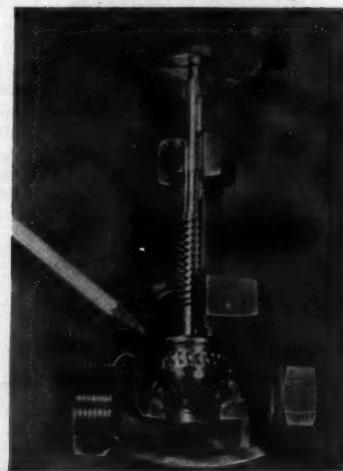
Spinning Disc Prevents "Wire-Drawing"

Uses — For general use in steam control applications.

Features — Stays on job month after month without leaking, without re-grinding. Creates complete metal-to-metal contact between seat and disc, thus preventing "wire-drawing." Uses new principle of spinning disc to throw off scale and other foreign particles, preventing these particles from becoming caught in seating line.

Operation — Valve's innovation is a spinning disc, which rotates up to 2,000 r.p.m. for a moment preceding closing. Disc does not spin when valve is cracked, or while throttling. Reversing chamber directs steam flow to turbine vanes just before disc descends into seat. Turbine vanes are shielded from steam flow when valve is open. Spinning disc throws off scale and foreign particles by centrifugal force, preventing particles from being caught in seating. Disc hits seat while spinning at high speed, consequently polishes line of closure, creating complete metal-to-metal contact between disc and seat, thus keeping valve tight.

Description — Disc is mounted on spindle against stainless steel ball bearing, aligning disc with seating when closed. Bearing will stand 950 deg. F. maintaining hardness of 60 Rockwell C. Valve is equipped with two separate seats,



Uses — In addition to normal soldering and tinning work, product facilitates soldering where irons are difficult to manipulate, and permits reaching small inaccessible spaces. Makes possible simultaneous soldering of several articles or units.

Features — Eliminates need for soldering iron, flux and melting pot—cuts soldering time in half. Applied by ordinary brush and melted with any heat source. Melts at temperature slightly higher than 400 deg. F. Brushed on exactly where needed and no where else. No time spent in first cleaning metal surface. No material wasted as no excess melts and drops off. Material brushed on entire surface where bond is to be made, thus achieving even distribution and more solid contact than edge soldering.

Performance — Manufacturer, tinning ends of braided wire, coats them with solder, melts it with flame and wipes—thus saving about half the time formerly used.

Paste Solder

Cuts Soldering Time in Half



EQUIPMENT PREVIEW

dipping wire ends first into flux, next into molten solder, and then shaking off excess solder. Another manufacturer, applying name plates on motor blocks, eliminates necessity of drilling four holes and fastening plate with self-tapping screws. One manufacturer effected savings by eliminating work of cleaning acid rust spots which appeared after ordinary soldering operations.

WAYNE CHEMICAL PRODUCTS CO., Dept. EP, 9393 Copeland St., Detroit, Mich.

When inquiring specify EP1217 . . . see information request blank, pgs. 14-15

Silver Stainless Steel Resists Pit Corrosion

Uses—For construction materials, equipment, etc., which must withstand pit corrosion and general corrosion.

Features—Addition of silver in quantities of less than 1% of total alloy rendered the steel substantially immune to pit corrosion. When properly incorporated in an alloy steel melt, it imparts to the ultimate steel free machining properties. Offers a decided reduction in work hardening of the austenitic chromium-nickel stainless steels, and is valuable in drawing and spinning operations. Has increased heat conductivity.

Description—The new steel may be cast, rolled, drawn and forged. The steel was a product of a research program on stainless steel at Massachusetts Institute of Technology. Research program was of a fundamental character and dealt with some of the outstanding limitations of 18-8 Stainless, particularly its susceptibility to pit corrosion and difficult machinability. It was found that Silver in extremely small amounts very drastically modified the physical and physicochemical characteristics of the passive ferrous alloys. Products have been fabricated from this new alloy steel by the Lebanon Steel Foundry and the Eastern Rolling Mill Company. Patents are held by

THE CHEMICAL FOUNDATION, INC., Dept. EP, 654 Madison Ave., New York, N. Y.

When inquiring specify EP1218 . . . see information request blank, pgs. 14-15

*Your Gracious Host...
From Coast to Coast*

In NEW YORK..



The Gotham

In CHICAGO..



The Drake
The Blackstone

In LOS ANGELES..



The Town House

In BELLEAIR, FLA..



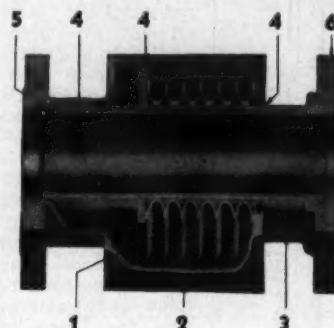
Bellevue-Biltmore

KIRKEBY HOTELS

When inquiring specify EP1219 . . . see information request blank, pgs. 14-15

Packless Expansion Joint

Operates on "Cold-Sprung" Principle



used in installation of pipe bends. Expansion element (1) is series of welded U-Rings of corrosion resistant steel welded to steel body (2) and the guide (4) on movable sleeve (3) to form a permanent seal between stationary body and movable sleeve. Element is compressed axially or cold sprung $\frac{1}{2}$ of total traverse for installation in cold line. As line expands, with application of heat, compression in element is relieved and it passes through neutral position and into tension for remaining $\frac{1}{2}$ of traverse.

Operation—There is a full, unrestricted flow through the joint and element is fully enclosed in a steel case so that no dirt or scale can enter element. Joint is guided at three points (4) and a limited stop (5) prevents overtravel. Furnished with flanged ends (6) or with beveled ends for welding for pressures to 300 lbs. with traverses of 1, 2, 3 and 4 inches in single joints with or without anchor base.

New Bulletin No. 35-50A gives full description, illustrations, prices and data. Sent on request.

AMERICAN DISTRICT STEAM CO., Dept. EP, North Tonawanda, N. Y.

When inquiring specify EP1220 . . . see information request blank, pgs. 14-15

Insulated Tools

Only Working Area of Tool Uninsulated

Uses—For work with hot lines where danger of burns and current interruption is ever-present. Not intended to supplant use of rubber gloves, but to further increase safety factor in such work.

Features—Insulation of each tool tested to its full dielectric strength. Insulating compound is of natural and synthetic gums solidly molded on tools—not wrapped or



dipped. Will not peel or crack, and maintains high dielectric strength over extreme ranges of working temperatures and in presence of moisture, oil, acid fumes, etc. Most units, depending upon service intended, are tested to 20,000 volts.



Description—Insulation is applied to small tools such as screw drivers of several types, pliers, socket wrenches, bolt and wire cutters, hack saws, etc. Insulation is applied to all but small working surfaces of tools, thus a screw driver is insulated all except the tip where it is inserted in screwhead.

CONNECTICUT HARD RUBBER CO., Dept. EP, 407 East Street, New Haven, Conn.

When inquiring specify EP1221 . . . see information request blank, pgs. 14-15

DRACCO PNEUMATIC CONVEYORS make 10 DEFINITE SAVINGS

Because the handling of Chemicals is a daily and constant expense it will pay to find out what DRACCO Pneumatic Conveyors can save you. They offer the possibility of 10 savings — and all our installations enjoy several of them. Here are the 10 ways that DRACCO Pneumatic Conveyors save money: (1) control of dust when transporting powdered material, (2) continuous automatic operation, (3) low maintenance cost, (4) labor saving, (5) improved working conditions, (6) lower cost of material due to receiving same in bulk, (7) saving in cost of packaging, (8) no loss of material in handling, (9) no contamination, (10) no interfering with the existing machinery.

Write for
Bulletin
No. 526



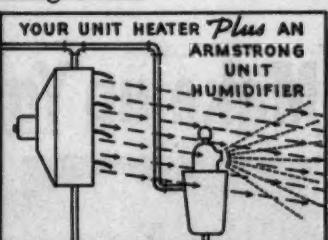
Write for Bulletin No. 526
DRACCO CORPORATION

Successors to The Dust Recovering & Conveying Co.
4080 East 118th Street, Cleveland, Ohio New York Office: 130 West 42 Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

When inquiring specify EP1222 . . . see information request blank, pgs. 14-15

*A
Perfect
Combination*



for Winter Heating!

HERE is an idea: why not use a **UNIT HUMIDIFIER** along with your **UNIT HEATER**? Enjoy the benefits of a mild, balmy atmosphere. Maintain good working conditions. End "DRY AIR" complaints.

The cost is reasonable. Type K-2A illustrated at the left lists for \$100.00 complete with Fries Humidistat, solenoid control valve, strainer, condensate drainage trap and fan. (\$7.00 less without fan.) Discounts on application.

Get our bulletin for capacity tables, installation diagrams, etc. **ARMSTRONG MACHINE WORKS**, 380 Maple St., Three Rivers, Michigan.

ARMSTRONG
STEAM TYPE
HUMIDIFIERS

When inquiring specify EP1223 . . . see information request blank, pgs. 14-15

TWO GREAT PRODUCTS OF EASTERN



Laboratory Pumps — Models A and B

These amazing midget pumps do the work of much larger pumps. For circulating or pumping liquids.

SPECIFICATIONS	
Type — Centrifugal	Size 5" x 2 3/4" x 3 1/8" Weight 2 1/2 lbs.
Power — Model "A" 1/100 H. P.	Model "B" 1/20 H. P.
Model "A"	Identical in size
Maximum Pressure	115 volts A. C. 115 volts D. C.
Maximum Capacity	18 pounds
Model "B"	5 gals. per min.
Maximum Pressure	12 pounds
Maximum Capacity	6 gals. per min.
Model "A"	115 volts, A. C. or D. C.
Maximum Pressure	20-30 pounds
Maximum Capacity	8 gals. per min.
Model "B"	8 gals. per min.
Complete with 115 A. C. or D. C. motor	
Model "A"	Bronze \$18.50
Model "B"	Monel \$21.50
	\$24.50

Other models also available.



MIXERS

All sizes and types

- SIDE ENTERING
- VERTICAL
- PORTABLE

Fractional to 20 H. P.

Write for free catalog of complete line of Eastern equipment.

EASTERN ENGINEERING COMPANY

46 Fox Street, New Haven, Conn.

When inquiring specify EP1224 . . . see information request blank, pgs. 14-15

Make up Your Loads



in standardized
units . . .
Elwell-Parkers will
handle them for you
at important savings

It will cost you little or nothing to "make up" your loads so you can move them more economically by Elwell-Parker Trucks, Tractors or Cranes—but it will help reduce your manufacturing costs permanently:

By enabling you to handle materials the modern, multiple-load way—in Boxes, Barrels, Bags or Bales; Bottles, Carboys, or similar containers. Elwell-Parker will demonstrate how you can make large savings in time; in floor space; in greater speed; in fewer accidents; in eliminating waste motion.

Write or WIRE COLLECT and a trained Engineer will help you plan an Elwell-Parker System to save in your plant.

The Elwell-Parker Electric Co., 4239 St. Clair Ave., Cleveland, Ohio.

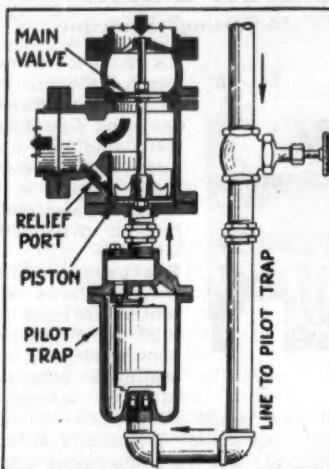
90 per cent of all Elwell-Parkers sold since 1906 are still on the job!

ELWELL-PARKER Power Industrial TRUCK

When inquiring specify EP1225 . . . see information request blank, pgs. 14-15

Giant Steam Trap

Flow Capacity for 300,000 lbs. Water per hr.



Uses — Originally built for draining evaporators in sugar refineries . . . now offered for automatic drainage for larger steam purifiers, separators, flash tanks, heat exchangers, continuous blow down systems, multiple effect evaporators, etc.

Description — This giant steam trap has 6" pipe connections and continuous flow capacity for 300,000 lbs. of water at 50 lbs. pressure. Unit consists of large inverted bucket type pilot trap and piston operated main valve. Main valve assembly is installed as an elbow on drain line. Pilot trap is connected to drain line at a point above main valve assembly. Thus main valve is kept sealed with water.

Operation — Operating cycle starts with flow of condensate to pilot trap which discharges against piston of main valve forcing piston upward until relief port is uncovered. Because piston head area is greater than main valve cross-section area, it is possible to open main valve against any pressure. Upward movement of piston is checked by using piston skirt to cut down area of main outlet port. Snap-action closing takes place when steam, instead of water, starts coming into pilot trap and causes it to close. Use of inverted bucket type pilot trap makes unit non-airbinding.

ARMSTRONG MACHINE WORKS, Dept. EP, 880 Maple St., Three Rivers, Mich.

When inquiring specify EP1226 . . . see information request blank, pgs. 14-15

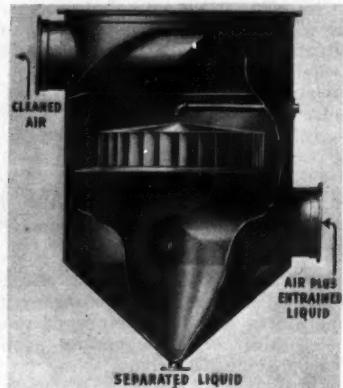
Entrainment Separator

No Moving Parts—Nothing to Regulate or Adjust.

Uses — For effective removal of atomized or entrained liquids arising from various processes and operations and drawn into a ventilating system. Designed to remove free moisture from air ventilating — washing processes, pickling and plating processes, and to extract oils, lacquers, solvents, coatings and other sprayed materials from ventilating air; to free conditioned air of excess moisture after washing and cooling, and for other vapor entrainment purposes.

Features — Manufacturer claims direct savings, as well as nuisance removal, from installations where alkali bearing, acid or oil bearing entrainment formerly damaged roofs and other property. In other installations, salvage of costly process liquids has resulted in direct operating savings. There are no moving parts and nothing to adjust or regulate.

Description — Connected into air intake duct, air with burden of liquid is passed through impingement unit of



unique design consisting of a multiplicity of curved vanes vertically imposed upon a shelf with central opening and with conical section on top of vanes with point upward. Impingement unit can be flushed occasionally with water or other liquid introduced just above conical impingement plate section. Flushing liquid strikes cone point, runs to periphery and on down over curved vanes, washing off any sedimentation.

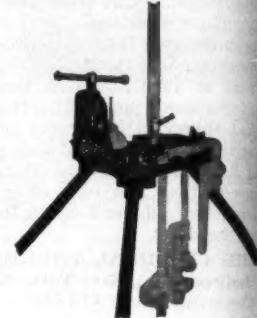
Air or gas entering unit is rotated, separating larger liquid particles, and then passes through turbine-like vanes to increase centrifugal growth of minute liquid particles. Anti-creeping prevents creeping of oil, etc.; the clean air passing on and out into the duct. Separated liquid drips down into hopper at bottom of unit, from where it is drawn off for re-use, salvage or disposal. Units are available of suitable material and in sizes and types to meet requirements, including vacuum, atmospheric and plus pressures.

CLAUDE B. SCHNEIBLE CO., Dept. EP, 3961 West Lawrence Ave., Chicago, Ill.

When inquiring specify EP1227 . . . see information request blank, pgs. 14-15

Tri-Stand Pipe Vise

Portable—Perfect Balance



Uses — Variable-purpose vise, portable, for use in shop or field.

Features — Legs hinged at tray, fold together compactly, and fasten with chain for convenient portability. Wide tray for dope pot, oil can and tools. Has pipe rest and 3 different size pipe benders that won't collapse the pipe. Special "No-Mar" jaws to protect pipe surface.

Description — Three-legged stand used for steady balance. Tools can be hung on raised rim as well as in slots in tray. Equipped with adjustable screw for ceiling brace to hold vise rigid while in use. Units are available in 2 1/2" yoke and 4" chain patterns—made of special malleable metal, jaws of hardened tool steel for firm grip and long wear. Legs equipped for screwing to plank or floor if desired.

RIDGE TOOL CO., Dept. EP, Elyria, Ohio.

When inquiring specify EP1228 . . . see information request blank, pgs. 14-15

Preservative Coating

For Concrete, Cement, Plaster, Brick, Walls and Floors

Uses — A penetrating and preservative coating for concrete, cement, plaster, brick, tile and stucco walls and floors.

Features — Resistant to water, oil, alcohol and soap solutions as well as to acid and alkali solutions within reasonable limits. Easily cleaned. Colors are set . . . will not bleach out. Penetrates deeply into porous surfaces, carries pigment used to full depth of penetration. Can be made permanently decorative in all practical colors. No special prime coat required. Maker claims preservative and decorative qualities are as lasting as surface covered.

Description — As no heavy bodied oils are used in its preparation there is no separation of pigment from vehicle, no saponification or oxidation. Maker states it is more easily applied than paint or usual water-proof mixtures. Two coats sufficient unless gloss finish desired. Dries in 8 to 12 hours without chalking, flaking or peeling. After curing, hardens without surface brittleness. One gallon covers from 400 to 800 sq. ft. depending on porosity of surface. Price comparable to ordinary floor or wall paints.

OWEN LABORATORIES, Dept. EP, 218 N. Canal St., Chicago, Ill.

When inquiring specify EP1229 . . . see information request blank, pgs. 14-15

Large D.C. Motors Explosion Proof

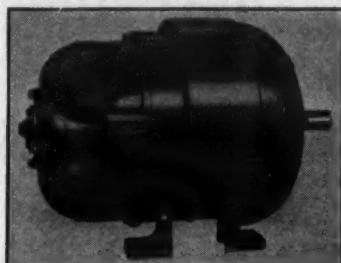
Range of Sizes From 1 HP to 75 HP

Uses—For safe D.C. motor operation in locations made dangerous by gases and vapors such as those produced by methane, acetone, benzene, various alcohols, common pyroxylin solvents, vapors of various petroleum distillates, including gasoline.

Description—These motors are designed and built to meet basic requirements that if gas or dust inside motor enclosure should ignite, resultant flame is prevented from escaping to outside air. Motor enclosure is built to withstand, without bursting or loosening joints, highest internal pressure which might develop from explosion of gases, such as those present about motor. Motor enclosure designed so that in event of burnout, enclosure will not reach high enough temperature to ignite surrounding vapors. These motors are fan-cooled, with ball bearings. These new larger motors complete the manufacturer's line from 1 HP to 75 HP. Tested and approved by Underwriters' Laboratories for Class A Group D hazardous locations.

RELIANCE ELECTRIC & ENGINEERING CO., Dept. EP, 1092 Ivanhoe Rd., Cleveland, O.

When inquiring specify EP1230 . . . see information request blank, pgs. 14-15



Controlled-Key Padlock

Four Rows of Tumblers Instead of One



Features—Uses patented key with four operating edges, two on top and two on bottom. By use of four rows of tumblers instead of usual single row, it is virtually impossible to align tumblers in any other way than by use of proper key. Maker claims padlock cannot be picked, jimmied, drilled or sawed.

Description—Padlock is of solid brass, protected by armored steel bonnet, keyhole plated, loosely fitting guard pins, and shackle made of special steel alloy. Positive key control eliminates unauthorized key duplication as key cannot be duplicated by commercial key machines.

DUDLEY LOCK CO., Dept. EP, 325 North Wells St., Chicago, Ill.

When inquiring specify EP1231 . . . see information request blank, pgs. 14-15

Semi-Paste Remover

No Caustic or Alkali, Benzol or Wax

Uses—Especially produced for removing bakelite and synthetic resin types of finish as well as paint, varnish, enamel, shellac and lacquer. By adding 1 part ammonia to 2 parts "Strypeeze," baked enamel can be removed.

Features—Does not run or drip, even on overhead or upright surfaces. Contains no caustic or alkali—is harmless to surface stripped, hands and clothing. Has no benzol, thus eliminating danger from poisonous fumes and fire. No wax is used to reduce evaporation—93% active sol-

vents left to strip finish. Stays wet longer—as long as 48 hours, depending upon conditions on interior surfaces—thus increasing effectiveness in removing finishes. Usually completely removes all coats of finish with one application.

Operation—When flowed on with brush, a wax-free anti-evaporant film forms on top, keeping remover in place on any surface, and driving powerful solvents into the finish. Film keeps remover from running and keeps it wet longer.

Description—Material has a flash point of 108 deg., which is higher than usual. One gallon strips approximately 200 sq. ft. of surface. Comes in containers from $\frac{1}{2}$ pint jar to 50 gallon drum.

THE SAVOGRAIN CO., Dept. EP, India Wharf, Boston, Mass.

When inquiring specify EP1232 . . . see information request blank, pgs. 14-15

Have You A New Product?

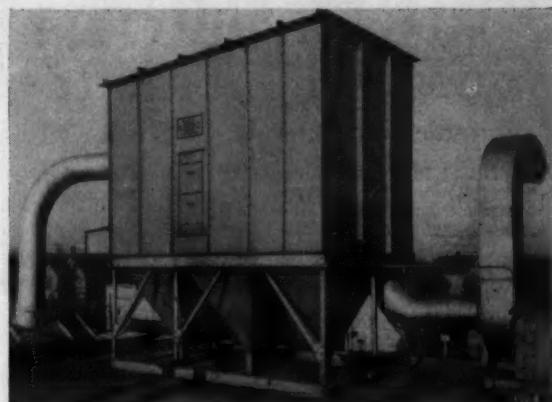
If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in chemical and process manufacturing send it to our Editors.

Through EQUIPMENT PREVIEW'S editorial pages they will introduce it to this great field . . . with more than 23,000 copies of this publication covering every plant.

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The Editors, EQUIPMENT PREVIEW
737 N. Michigan Avenue

Chicago Illinois



TEN YEARS OF SAVINGS WITH THIS SLY DUST FILTER

Ten years ago, The Ohio Carbon Company, manufacturers of carbon brushes, installed this Sly Dust Filter to protect health of workmen, keep the plant cleaner and effect savings in production. Today, the filter, after continuous use, is giving thoroughly satisfactory service. It has improved the morale of the workmen. It reclaims both copper and carbon. The former is sold as scrap and the latter (when there is a market for it) as a low grade carbon.

The Sly Dust Filter has meant important savings to Ohio Carbon—in one year alone when using carbon reclaims they saved about 20% of the cost of the filter.

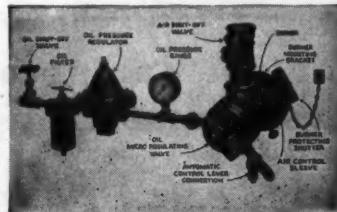
This is but one instance where Sly Dust Filters are saving money in many lines of industry. Write for booklet, *Guide to Dust Control*.

THE W. W. SLY MFG. CO.
4734 Train Ave. Branch Office in Principal Cities Cleveland, O.

When inquiring specify EP1234 . . . see information request blank, pgs. 14-15

Proportioning Low Pressure Oil Burner

Combustion and Temperature Control . . . Fuel Economy



Uses—Wide variety of applications requiring accurate control of combustion and temperature. Readily connected for automatic control.

Features—Automatically and accurately proportions all primary and secondary atomizing air and oil flowing through burner from minimum to maximum capacity. Maintains desired furnace atmosphere, consistently giving CO₂ readings between 13 and 15% over full range of burner rating. Frequently reduces fuel consumption 10 to 15%. Combines straight line flow oil control valve with straight line flow air control mechanism in single, compact unit. Easy to install—requires only one air connection and has no external oil tubing. Simple to operate—indicator dials on all adjustments for duplicating burner settings.

Description—The oil control valve consists of a V-groove in a flat surface, covered by a rotating cam, bolted to the burner backplate. Screwed into bottom of oil valve is the oil tube on the opposite end of which is the oil nozzle. Around oil tube and supported by burner backplate is the inner air nozzle operating tube and inner air nozzle. The operating lever causes inner air nozzle to move backward and forward and at same time rotates oil control valve cam.

HAUCK MANUFACTURING CO., Dept. EP, 147-157 Tenth St., Brooklyn, N. Y.

When inquiring specify EP1233 . . . see information request blank, pgs. 14-15



**Water Softener
for a Million
"Saturday Nights"**



Rides to Market with SIGNODE

Because the traffic manager of one of the nation's largest manufacturers of water softener* investigated the Signode System, his firm today is reaping a rich reward in lower car door bracing costs. He is also eliminating a great source of customer complaints from damaged merchandise. The System, employing Signode Anchor Strapping applied across car doorways, has substantially reduced cost of door bracing materials. It has cut load-

ing to a fraction of the time formerly required. And it is providing first class protection to goods in transit. Whether you ship in barrels, kegs, drums, cartons or bags, call in your local Signode representative to explain Signode methods. Or, write us direct, naming your product.

*Name on request.

Ask Us About Signode Strap Cutter for Quick, Easy Opening of Incoming Steel Strapped Shipments.

SIGNODE STEEL STRAPPING CO.
2607 N. Western Ave., Chicago, Ill.
370 Furman St., Brooklyn, N. Y.
458 Bryant St., San Francisco, Calif.
40 OFFICES THROUGHOUT UNITED STATES AND CANADA

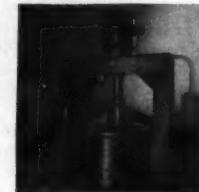
When inquiring specify EP1235 . . . see information request blank, pgs. 14-15

FILTRATION EQUIPMENT PREVIEW

THE BIRD CONTINUOUS CENTRIFUGAL SOLID BOWL FILTER for filtration (or classification) of solids varying in size from a fraction of a micron to $\frac{3}{8}$ " mesh. Handles large or small volumes of thick or thin slurries. Washes efficiently. Requires no filter screens, cloths, vacuum or other auxiliaries. Made in four sizes,—for production ranging from a few hundred pounds of solids per hour up to many tons per hour.



THE BIRD CONTINUOUS CENTRIFUGAL SCREEN FILTER for crystalline or granular solids. Dries to uniform and exceedingly low moisture content. Thoroughly washes with minimum dilution using two wash liquors if desired.



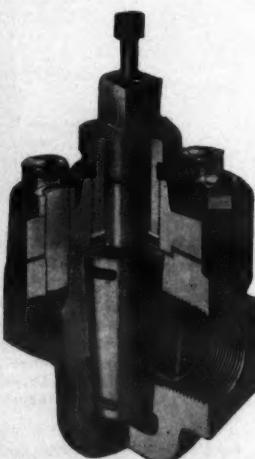
THE BIRD SUSPENDED CENTRIFUGAL for batch filtration or clarification. As much as $2\frac{1}{2}$ times the separating force of ordinary centrifugals can be employed. 40" or 48" baskets, perforate or imperforate. Delivers drier solids, clearer liquors, maximum output at low cost.

Get the whole story in brief, easy-reading illustrated Bulletins. Write.

BIRD MACHINE CO., South Walpole, Mass.

When inquiring specify EP1236 . . . see information request blank, pgs. 14-15

NORDSTROM Lubricated VALVES



Leak-resistant
Corrosion resistant
Erosion-resistant

Never unseated
Easy turning
Quarter turn

Available in any desirable alloy for handling acids, sludges, gases and liquids.

Temperatures:
-150° to +600°
Pressures:
Up to 15,000-lb. Test

Sizes:
1/2" to 30"
Ask for Bulletins

MERCO NORDSTROM VALVE CO.

A Subsidiary of PITTSBURGH EQUITABLE METER CO.
Main Offices: 400 Lexington Ave., PITTSBURGH, PENNA.
Branches: New York City, Buffalo, Philadelphia, Columbia, Memphis, Chicago, Kansas City, Des Moines, Tulsa, Houston, Los Angeles, Oakland. Canadian Licensees: Peacock Bros., Ltd., Montreal. European Licensees: Audley Engineering Co., Ltd., Newport, Shropshire, England.

When inquiring specify EP1237 . . . see information request blank, pgs. 14-15

Dual Screen Grinder

Center Feed Eliminates Shocks and Overloads

Uses — For high production grinding of chemicals and industrial materials. **Features** — Mills are designed for high capacity and high degree of control over grain size and granulation. Through use of triple reduction process almost any desired degree of fineness can be obtained, as wide variety of final reduction elements may be used ranging from thin alloy steel blades to heavy manganese steel hammers. Through use of dual screens (which cover 70% of drum area), mesh of screen may be fitted to degree of fineness desired, thus avoiding necessity of using screens with large perforations in order to get capacity with average grain size.

Description — Center feed to mill from side of rotor eliminates heavy shocks and sudden overloads. Material is passed successively through a series of breaker bars, triangular pivoting crushers to the final series of special alloy steel hammers. Travel speed of grinding machinery increases with each phase due to increased diameter of rotor. Operating at 1800 revolutions per minute, the standard speed of many electric motors, so that direct connection is practical and efficient, making for low upkeep cost. Maximum of 18,000 feet per minute is reached at tips of final grinding elements. Final elements are used for final sizing only, and almost any reduction can be secured. Higher travel speed of rotor unit carrying final hammers produces a flywheel effect, smoothing and balancing heavier work of slower moving breaking and crushing machinery in first and second grinding phases.

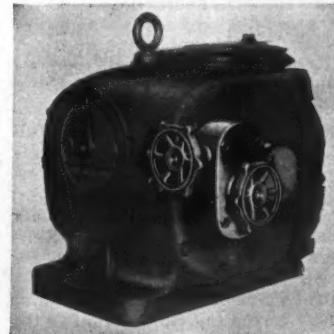
PRATER PULVERIZER CO., Dept. EP, 1802 55th Avenue, Chicago, Ill.

When inquiring specify EP1238 . . . see information request blank, pgs. 14-15



Vernier-Control Variable Speed Transmission

For Fine Control of Speed Changes



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